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JAN. 1988 • ISSUE 39

MicroTimes™

John Sculley

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Selecting DESQview, the environment of choice, can give you the productivity and power you crave, without the loss of your old programs and hardware. If you like your existing programs, want to use them together, transfer data between them, print, sort, communicate with or process-in-background, yet still have the need to keep in place your favorite PC(8088, 8086, 80286 or 80386), DESQview is the "proven true" multitasking, multiwindowing environment for you. Best of all, DESQview 2.0 is here now, with all the money saving, time saving, and productivity features that others can only promise for the all-too-distant future.

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INFO WORLD
DESQview 2.0
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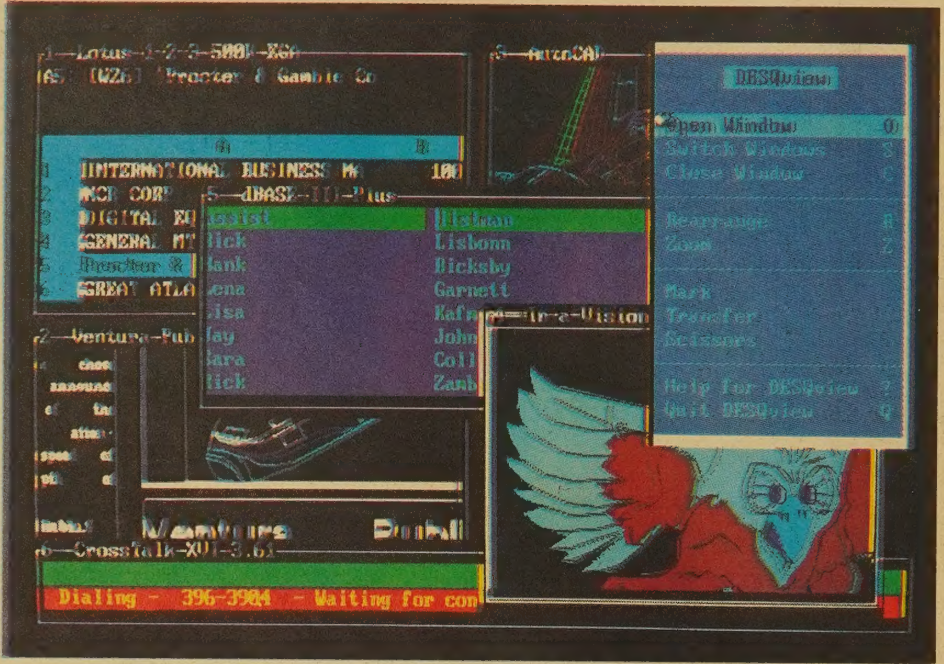
July 6, 1987



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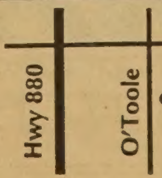

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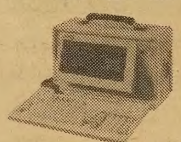

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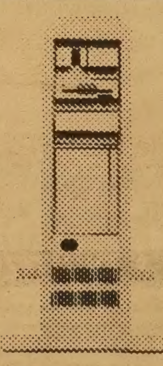

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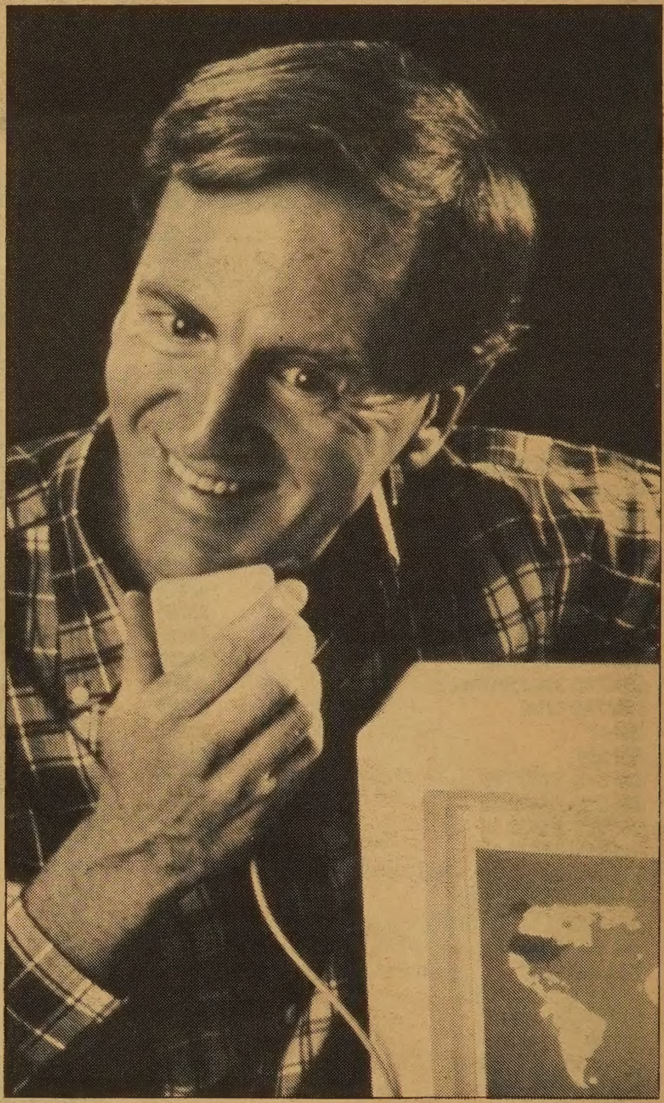

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An Interview With John Sculley

By Mary Eisenhart

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The MicroTimes 100

Our annual list of the people who made outstanding contributions to the industry during 1987, from CEOs to users. Plus organizations of note, predictions for next year and, by popular demand, a Year's Worst list.

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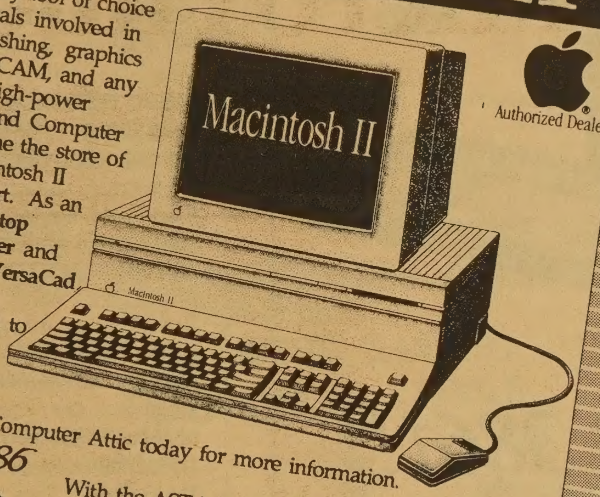

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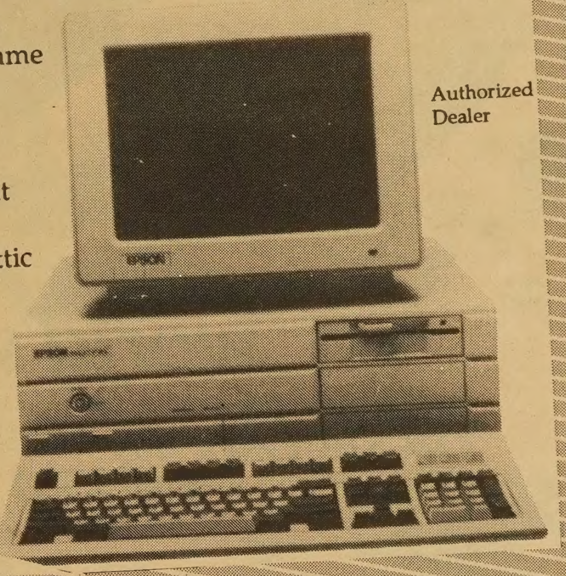

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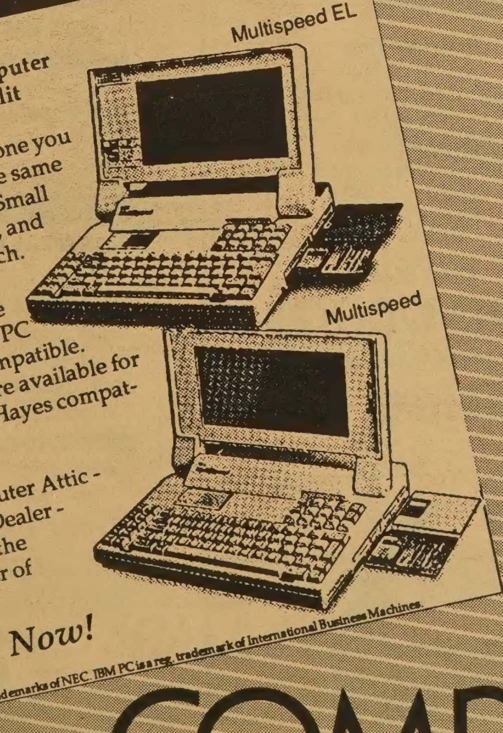

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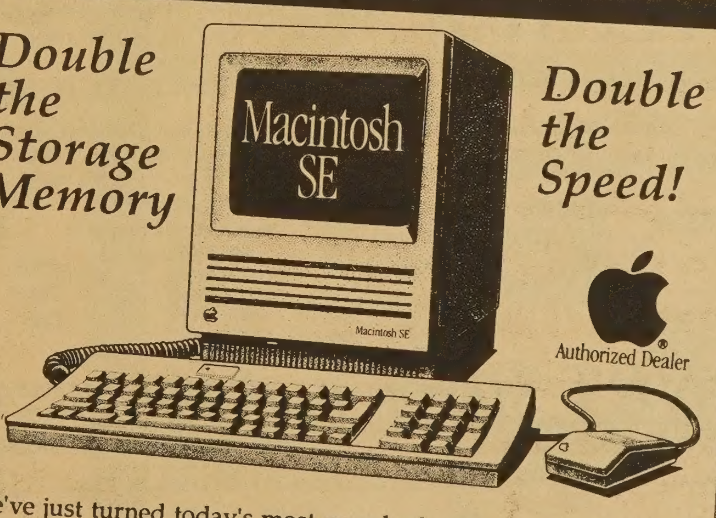

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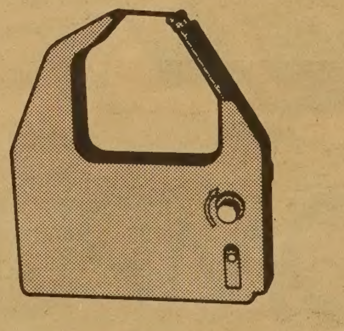

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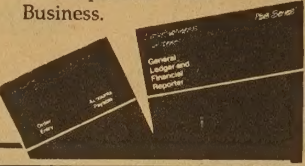

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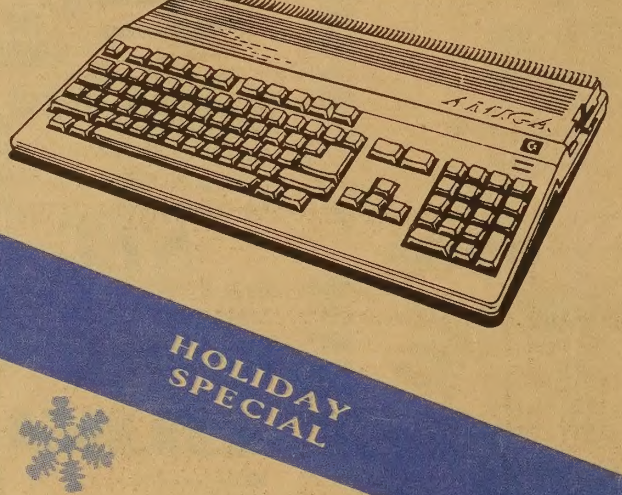

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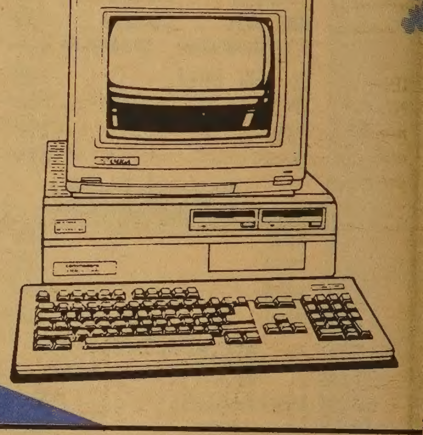

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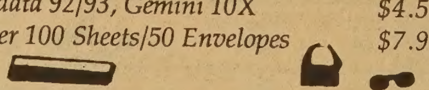

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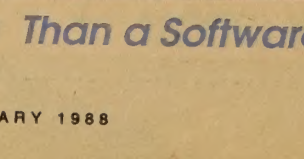

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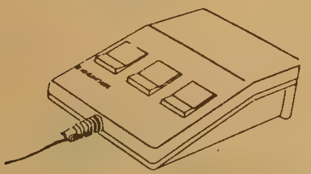

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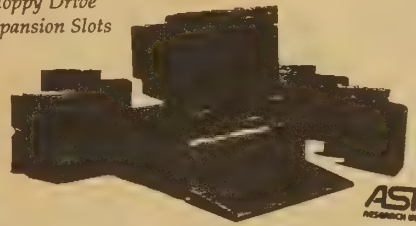

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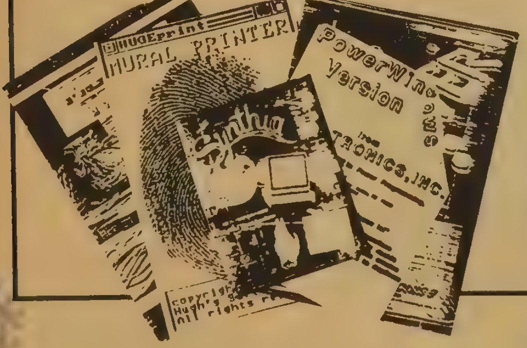

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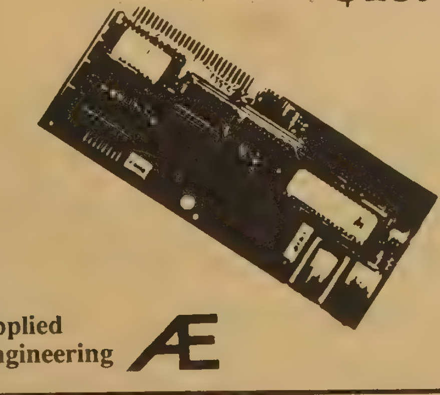

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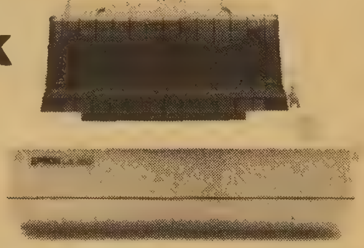
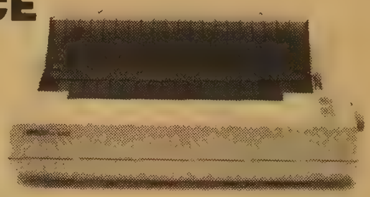
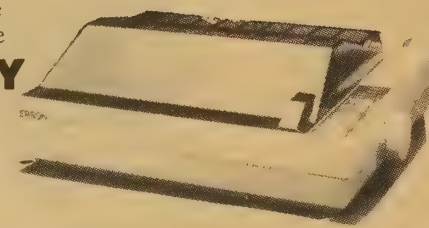


Epson's remarkably quiet LQ-850 and LQ-1050 are fast, 24-pin dot-matrix, letter quality printers ideal for small business and corporate environments. Both print at 264 characters per second (CPS) in the high-speed draft mode and 88 CPS in letter quality mode, at a quiet 55 dB or less noise level. The standard, 80-column LQ-850 and wide carriage, 136-column LQ-1050 bidirectionally print high-resolution quality in both text and graphics. For versatility and ease of operation, the LQ-850 and LQ-1050 are built with SmartPark™, the paper handling feature which allows changing paper without changing hardware; and SelecType, an illuminated LED, front control panel for selection of resident and optional fonts, pitches and print modes at the touch of a button. There's also a standard 6K internal buffer. And both come with Epson's one year limited warranty.

LQ-1050
BEST
PRICE



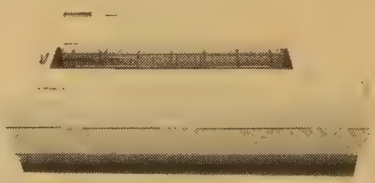
FX-86e
Same as 286e
Small carriage
$VERY
LOW



Printing 240 characters per second printhead speed in the high speed draft mode, the superb 9-pin FX-86e and FX-286e will turn out a typical length business letter in approximately 20 seconds. To provide your business printing with a more polished, professional appearance, switch to the Near Letter Quality mode. At 48 characters per second printhead speed, your reports, correspondence, proposals and other important documents will look like they came from an office typewriter.

FX-286e
$$$SAVE

LQ-800
$375



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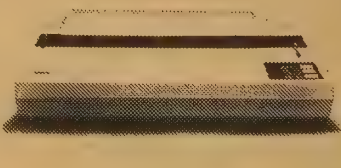
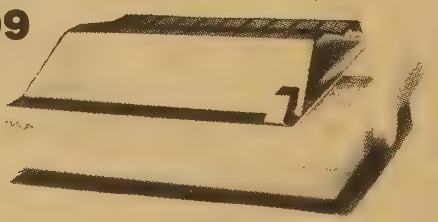


LX-800
$199



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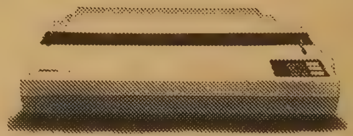

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December 5 Computer Supermarket Show And Sale. Cow Palace, San Francisco. Microshows (800) 433-7469.

December 5 Build An AT/XT Clone Seminar With Edwin Rutsch. Whole Earth Computer Access Computer Training, Berkeley. Contact Sharon Williams at (415) 843-1700.

December 8 Beginner DOS Class. Santa Clara. National Computer Club, 3080 Olcott Dr., Suite 125 A, Santa Clara, CA 95054.

December 9 Special South Bay Meeting Of AT&T Bay Area User Group. AT&T Building 1090 East Duane Ave., Sunnyvale. Contact Mark Dill at (408) 995-3966 or Bob Larsen at (408) 226-0116.

December 11 Real Estate Management, Accounting And Computer Seminar. San Francisco. Conact Businessland at (415) 989-3741 or Haberman Associates at (415) 641-0850 for information.

December 12 Computer Mart. De Anza College Campus Center, Cupertino. Contact the Students Activity Center (408) 996-4350.

December 12 Computer Swap Meet. Santa Clara County Fairground, San Jose. RK Productions. (800) 252-7927.

December 12 Amiga Class: Overviews. Contact Patrick Bailey at (415) 949-4864.

December 12-13 Computer Supermarket Show And Sale. Santa Clara Convention Center, Santa Clara. Microshows (800) 433-7469.

December 13 Mac Festival '88. Dunfey Hotel, 1770 South Amphlett, San Mateo. Sponsored by the Mac Business Association, 425 Anchor Road, Suite 205, San Mateo, CA 94404. Call M.A.C. at (415) 644-0516 for information.

December 14 C Debugging Clinic. One day clinic or three day seminar. Contact Uni-Ops, 260 Marshall Drive, Walnut Creek, CA 94598-2833. (415) 945-0448.

December 14 Visualizing Troff Internals Tutorial. One day clinic or three day seminar. Contact Uni-Ops, 260 Marshall Drive, Walnut Creek, CA 94598-2833. (415) 945-0448.

December 14 Stress Management For The Working Woman One Day Seminar. Sacramento, Holiday Inn Holidome. Contact The Business Women's Training Institute at (800) 423-6540 for information.

December 15 Stress Management For The Working Woman One Day Seminar. Hyatt Regency, Oakland. Contact The Business Women's Training Institute at (800) 423-6540 for information.

December 15 Beginner DOS Class. Santa Clara. National Computer Club, 3080 Olcott Dr., Suite 125 A, Santa Clara, CA 95054.

December 16 Unix System Security Tutorial. One day clinic or three day seminar. Contact Uni-Ops, 260 Marshall Drive, Walnut Creek, CA 94598-2833. (415) 945-0448.

December 16 Stress Management For The Working Woman One Day Seminar. San Francisco, Holiday Inn, Golden Gateway. Contact The Business Women's Training Institute at (800) 423-6540 for information.

December 17 Stress Management For The Working Woman One Day Seminar. Hyatt, San Jose Airport. Contact The Business Women's Training Institute at (800) 423-6540 for information.

December 19 Computer Show. Pasadena Center, Pasadena, CA. Contact Microshows (800) 433-7469.

December 19 Computer Swap. San Diego County Fairground, Del Mar. Call RK Productions at (800) 252-7927 for information.

December 19 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

December 19 Marin Computer Show & Sale. Marin Center Exhibit Hall, San Rafael. Contact Golden Gate Shows at (415) 388-8893 for information.

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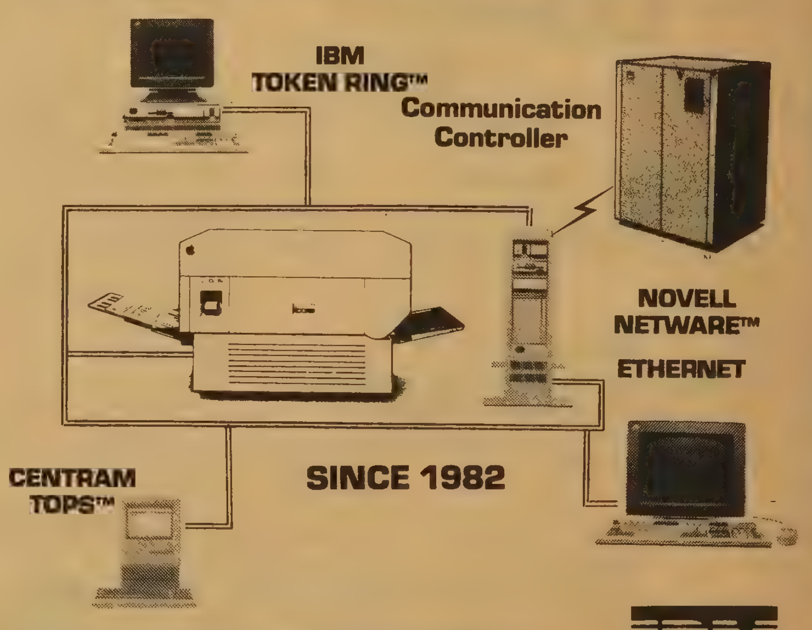

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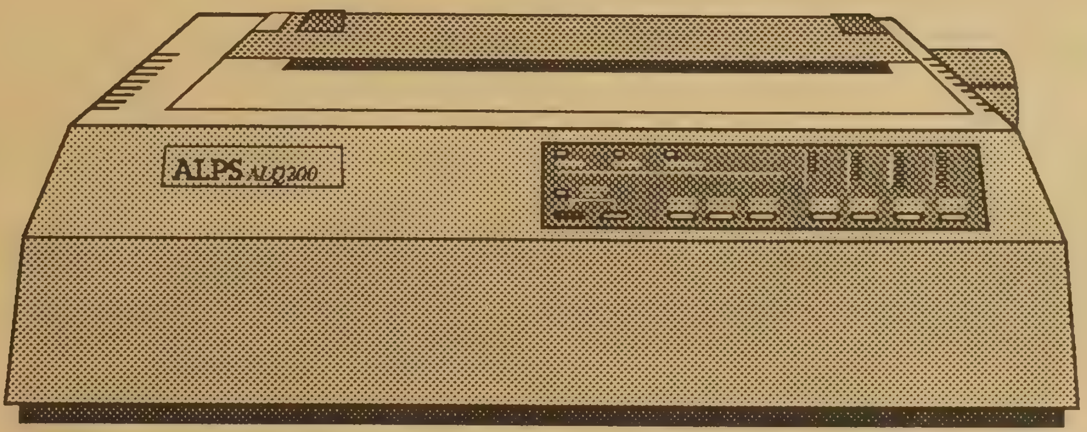

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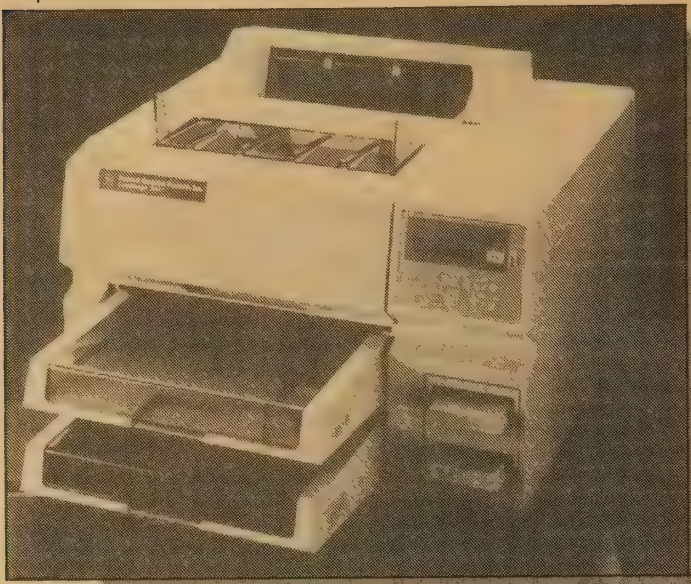

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January 16–18 AmiEXPO. Westin Bonaventure, Los Angeles. Call Dave Glassman at (800) 322-6442 for information.

January 19 Computer Accounting Seminar. El Cerrito. Contact Software Solutions at (415) 237-5257.

January 23 Computer Swap Meet. San Mateo County Fairgrounds, San Mateo. RK Productions. (800) 252-7927.

January 23 Computer Swap. Orange County Fairgrounds, Costa Mesa. Call RK Productions at (800) 252-7927 for information.

January 25–27 The Desktop Communications Conference. Marriott Hotel, Anaheim. Contact Infonetics at (408) 746-2500.

January 30 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

February 8-11 UniForum '88 UNIX Conference. Dallas Infomart, Dallas, Texas.Contact UniForum at (800) 323-5155.

February 17-19 Software Development '88. Ramada Renaissance, San Francisco. Contact JoAnn Tingley, Conference Coordinator, Seminar Division, Miller Freeman Publications. (415) 995-2426. Fax: (415) 543-0256.

March 26 Computer Swap. Alameda County Fairgrounds, Pleasanton. Microshows (800) 433-7469.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, on the street in February is January1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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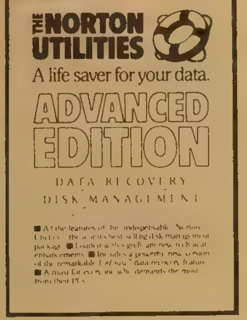
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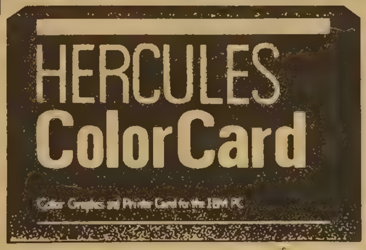
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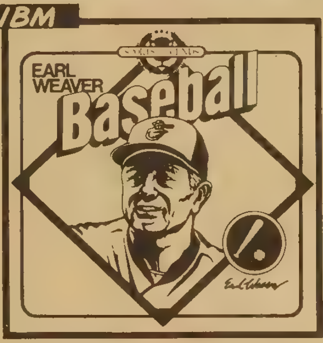
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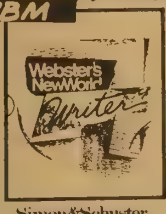
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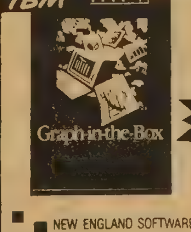
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BUT JAN LEWIS SAYS . . .

COMDEX Indicates Good Times Ahead

It was the best of times, it was the worst of times. It was COMDEX 1987.

All indicators of the health of the personal computer industry were up. Fall COMDEX, the bellwether of the industry, enjoyed record attendance. All leading players in both hardware and software were reporting higher revenues and higher earnings — some at near-record levels.

Yet all this occurred just a couple of weeks after what is being called the Stock Market Crash. Now, whether it really was a crash, or just a major correction, is debatable, but it certainly was the largest stock market decline in U.S. history. Of course, some would argue that once the Dow Jones hit over 2000, it was pure speculation, and that the drop in the Dow to a trading range of 1800-2000 was a necessary correction. Price-earnings ratios of 60 to 1 are vaporware, regardless of what you're shipping! But the bottom line is that we had the largest drop ever in the history of the stock market.

To top it off, Las Vegas was experiencing a fluke rainstorm and flood. Las Vegas is a city with no drainage, and a two-day rainstorm cripples the city. It was impossible for taxi or pedestrian to go anywhere in Las Vegas without being immersed in pools of water. (I get the impression that when they built Las Vegas, the builders looked around and said, "Do you think it's going to rain?" "Nah," said someone else, "this is the desert. We don't need a drainage system here.")

Meanwhile, back on the COMDEX show floor, signs were everywhere that the industry slump was over. Attendance hit nearly 100,000, a COMDEX first. Not only that, the rebirth of the industry seemed to cut across all segments. It was not "The COMDEX of..." anything particular, the way past COMDEXes were; there was a feeling of growth and optimism across the board.

Several trends were evident. While it was at COMDEX a year ago that the first machines based on the Intel 80386 were announced in large numbers, at this COMDEX it became clear that the 386-based computer would be the mainstream corporate PC. Between the price wars on the 386s from clone manufacturers and the availability of add-on boards that would turn your AT or even your XT into a 386 machine, it was starting to look like the 80286 AT was an interim step.

This trend was reinforced by the growing awareness that Intel had fumbled the 286, making several mistakes that it fixed in the 386. The result is that the 286 machines, including ATs and AT clones, would have limitations that were corrected with the 386 machines.

The average desktop 386 machine was now running at a clock speed of 20 megahertz instead of 16 megahertz. And even laptops were now available with 386 CPUs. GRiD, NEC, Toshiba, and Datavue all announced 386-based laptops.

The influence of the PS/2 family from IBM was also evident. Western Digital offered a chip set that was allegedly compatible with IBM's Micro Channel Architechture. This claim was certainly met with much skepticism. After all, IBM has patents up the gazoo on this thing, and the company is making loud noises about vigorously defending its patents. Furthermore, it's way too early to field test the compatibility of Micro Channel Architecture clones, so this area promises to be clouded with uncertainty for some time to come.

AST Research took a different approach. It introduced what it calls the SmartSLOT, which allegedly achieves the functionality of IBM's Micro Channel Architecture without promising compatibility.

OS/2 was probably the most talked-about piece of vaporware at the show. IBM held a press conference to announce that it would ship the basic version of OS/2 in December of this year. Nevertheless, it is clear that IBM's position has been hurt by the delay of several years in shipping its new operating system. The confusion over "standards" or lack of them in the IBM marketplace has opened doors to other vendors, especially Compaq and Apple. As of even a year ago, if a buyer didn't want to make a decision, he would buy IBM with its PC-DOS version of MS-DOS. It was the easy choice. But nowadays, even IBM doesn't represent an easy choice. Between MS-DOS, Windows/386, Lotus-Intel-Microsoft's EMS 4.0, OS/2, and OS/2 Extended Editions, there are no easy choices.

Nowadays, even IBM doesn't represent an easy choice. Between MS-DOS, Windows/386, Lotus-Intel-Microsoft's EMS 4.0, OS/2, and OS/2 Extended Editions, there are no easy choices.

A year ago, major corporate buyers intended to buy IBM personal computers and OS/2. By this year, large corporate buyers had changed their attitude. "We'll buy OS/2 when we need to, and not before" was the prevalent attitude.

Perhaps the most exciting trend was the continued downward momentum in prices of laser printers. There are two components to laser printer prices today: the price of the printer itself, and the price of PostScript. PostScript has become the de facto standard for Page Description Language — the software that prepares output for the printer itself. Both of those components are experiencing downward pressure. Due to competition and volume, the basic printer mechanism is becoming cheaper, while attributes such as pages per minute, duty cycle, and printer memory are becoming richer.

More surprising, though, is the price movement in the PostScript component. The sole vendor of PostScript is Adobe, and Adobe has kept the price high. Since Adobe sells to printer manufacturers, and since the manufacturer and the distribution channels need to mark up that price by a factor of three to five times, the consumer can easily end up spending more than $1,000 just for the PostScript component of the printer. Well, relief is in sight. Several companies, including Control-C and Phoenix Software (the makers of IBM compatible ROM BIOS among other things) have produced clones of PostScript. While some time is needed to fully test the compatibility of these PostScript clones, this holds great promise for the price of laser printers.

Several other developments in the desktop publishing area were exciting as well. QMS, the maker of the KISS laser printer family, was showing a color version of PostScript. Color monitors and color laser printers had a high profile at this COMDEX. Lightspeed, a company which had previously produced color desktop publishing systems on costly Sun computers, was showing its impressive software running on a Macintosh II at the Apple booth. Additionally, companies such as Upstart Corporation and Bitstream showed products which produced true WYSIWYG (What-you-see-is-what-you-get). Despite the claim that nearly every vendor makes, most desktop publishing systems are *not* true WYSIWYG, a failing which can prove very annoying to anyone using a desktop publishing system.

So, while the rest of the world remembers the boom times of 1984 through 1987, the computer industry will remember the worst slump in its history. And while the rest of the world remembers the crash of 1987, the personal computer industry will remember the resurgence of 1987. Judging from the excitement and products at COMDEX, we're in for some exciting times in personal computing. ☐

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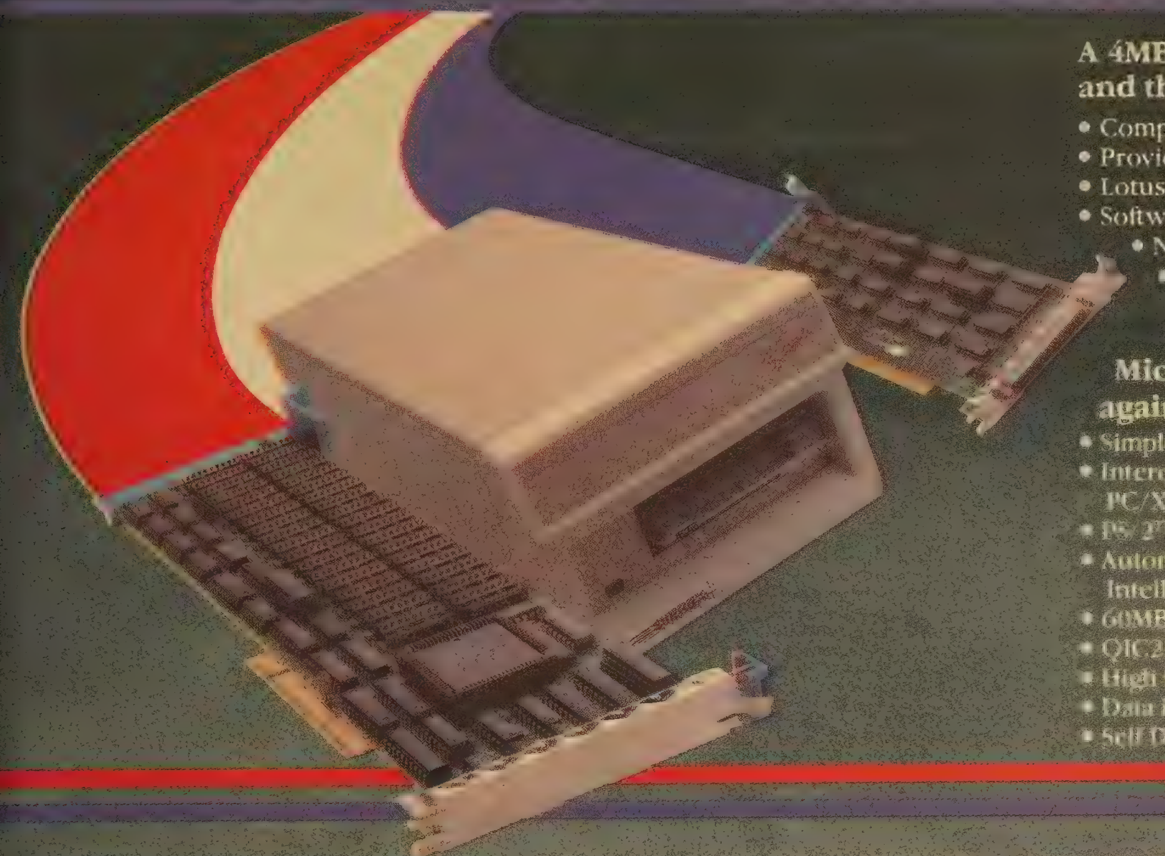

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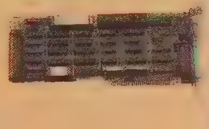

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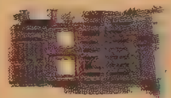

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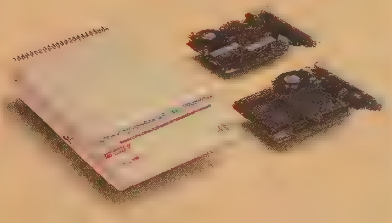

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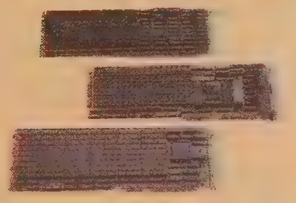

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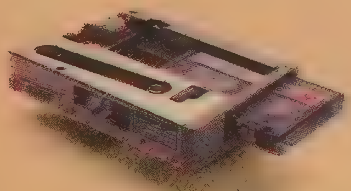

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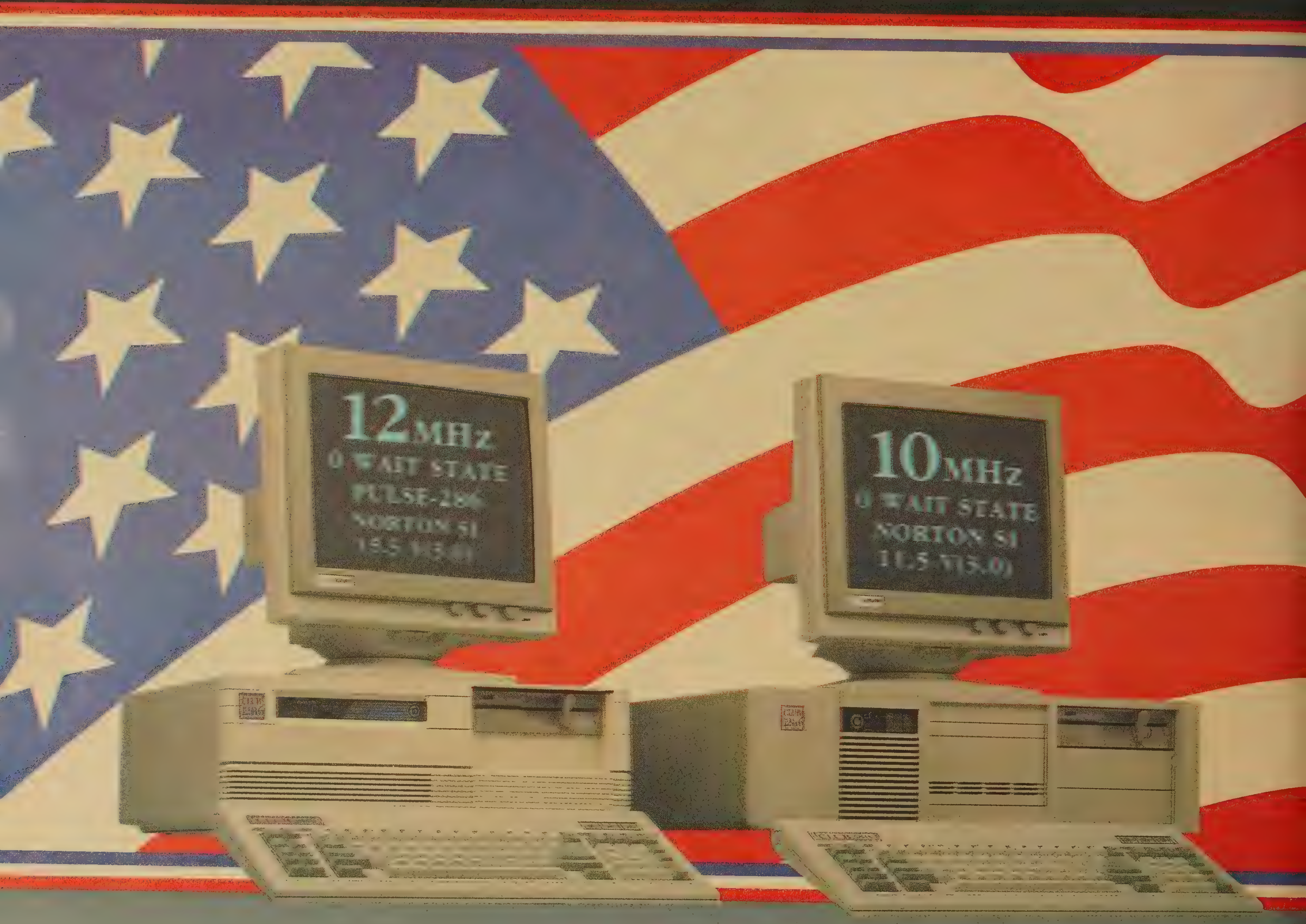

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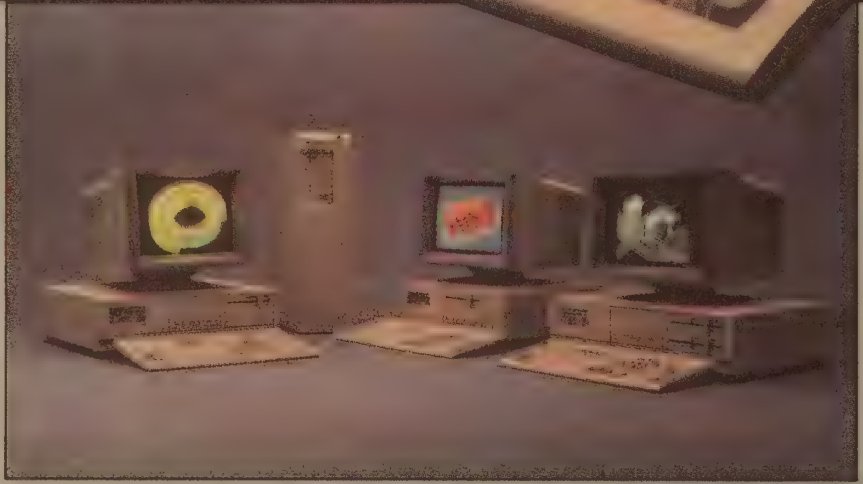

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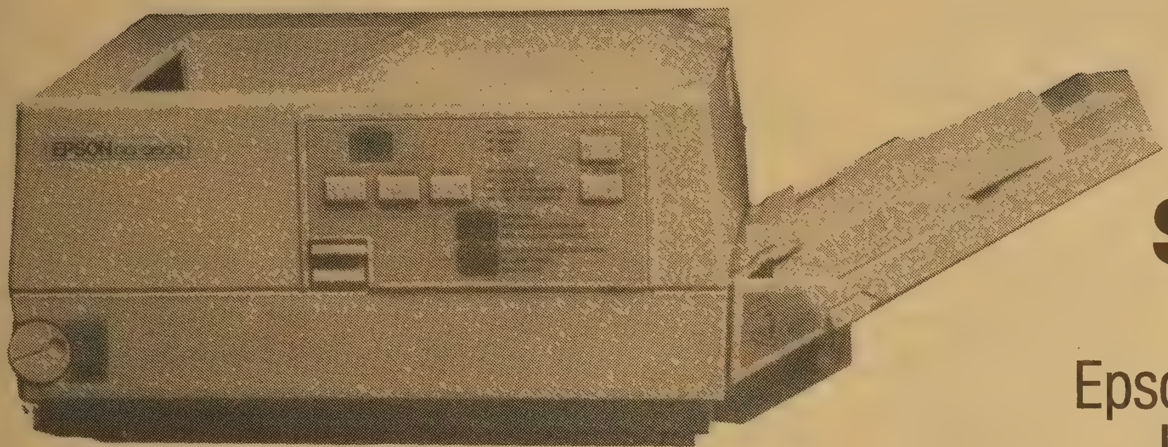

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NEWS AND ANALYSIS

By Paul Hoffman

OS/2 To Ship In December, IBM's Extended Edition To Ship In July

IBM announced at COMDEX that its version of OS/2 will ship in early December, catching many competing manufacturers off-guard. Microsoft also announced that it will ship final OS/2 packages to manufacturers later in December. There were no surprises about the features of OS/2 due to the wide distribution of OS/2 development kits from both IBM and Microsoft in recent months. Both IBM and Microsoft were showing the multitasking operating system running in their booths. IBM's package is called OS/2 Standard Edition 1.0.

At the same announcement, IBM gave its schedule for release of other OS/2 versions. Extended Edition 1.0, which includes an advanced relational database manager based on SQL technology and a commmunications manager for coordinating communications with other computers as well as terminal emulation, will be released in July 1988. IBM's booth was jammed at the stations where they were showing demonstrations of Extended Edition. According to IBM, Extended Edition will be the first offering to participate in IBM's grand Systems Application Architecture (SAA) framework.

SAA is a precisely-stated standard on how operating systems can both communicate and share work. For example, if you are running a database application under Extended Edition and are connected to a mainframe such as an IBM 9370, part of your data processing can be performed on the mainframe without your intervention. Extended Edition 1.0 will contain most of the code required for SAA. IBM has also announced SAA extensions for its System/3X and System/370 series computers.

IBM also announced that the Presentation Manager, another part of SAA, will be available in both OS/2 Standard Edition 1.1 in October 1988 and OS/2 Extended Edition 1.1 in November 1988. The Presentation Manager gives you a standard method for showing programs that are running at the same time on the screen. This is especially important for IBM, since the Presentation Manager will lay the groundwork for the user interface on other SAA operating systems as well.

IBM's Standard Edition 1.0 will cost $325 when it is released, while the Extended Edition 1.0 will cost $795. Upgrades to version 1.1 for each operating system will be free. In a radical shift for IBM, both operating systems are covered by a 90-day warranty, which can be extended to a year for a fee. In the past, IBM has provided no direct service for its PC DOS operating system.

IBM staff in the booth made it very clear that Extended Edition will be available from IBM only, not from Microsoft. As one IBM employee who requested anonymity stated, "The Database Manager and Communications Manager are based on true-blue IBM technology: we're not about to sell that to anyone." The Database Manager is very similar to IBM's DB2 and SQL/DS mainframe products, which have been under attack in the last year from competitors in the mainframe software market. The Communications Manager provides an all-in-one approach to token-ring, direct-connect, and modem communications. One part of the package even lets the system administrator prevent certain users from using specific programs.

IBM disappointed many LAN manufacturers by announcing its LAN Server that will require Extended Edition version 1.1. LAN Server will thus only work on IBM PS/2 hardware and not on other computers. This puts Microsoft and 3Com in a tough situation, being forced to compete with IBM with their own LAN Manager products. IBM said that LAN Server will control security, printer management, and shared file services on a token-ring LAN. It will be released in November 1988 and will cost $995.

A few of IBM's competitors will have OS/2 available soon after IBM. Marty Taucher, spokesperson for Microsoft, said that he expects some manufacturers to finish their final steps of fitting OS/2 to their computers within weeks of Microsoft's shipment to them. He notes that others may take significantly longer. "Some of them didn't believe that we would deliver on time and haven't been working too hard on their ports. Getting OS/2 on a computer will involve much more thinking than MS-DOS did."

Developers working on OS/2 programs were elated by the announcements. Although many are still months, if not years, away from releasing programs that take advantage of OS/2's features, many who were showing preliminary versions of programs in Microsoft's booth hoped that the early release will cause a groundswell of support for the operating system. Those showing products included Borland (*Paradox*), MicroPro (*Wordstar 2000*), MicroRim (*R:BASE*), Digital Communications Associates (*IRMA*), Micro Database Systems (*MDBS*), and Microsoft itself (languages). An interesting note in the press releases that came with the various OS/2 announcements. All of IBM's press releases stated at the end that "OS/2 and Operating System/2 are trademarks of IBM," while Microsoft's press releases give no credit for a trademark on OS/2. Also, IBM capitalizes "Presentation Manager" and claims a trademark on it; Microsoft does not capitalize it or give credit for a trademark.

Mosaic Announces Twin Follow-Up

Mosaic Marketing, Inc., creators of *Twin, a Lotus 1-2-3* lookalike program, announced the release of *Diamond*, another *1-2-3* lookalike with added word processing and business graphics capabilities. *Diamond*'s word processor includes a spelling checker and thesaurus, and the graphics package contains a wide variety of graphic formats for data. The spreadsheet is compatible with versions 1A and 2 of *1-2-3*. The cost is $195. Mosaic Marketing, Inc., (617) 491-2434. Mosaic has been in the news recently as the object of a Lotus copyright infringement lawsuit that is awaiting trial in Boston. At a meeting with lawyers November 9, Judge Robert E. Keeton indicated that he felt that many of the pre-trial actions in Lotus v. Mosaic could be combined with a similar case of Lotus v. Paperback Software as well as the related SAPC v. Lotus case. Judgement on pre-trial motions have been delayed due to Judge Keeton's presiding over the lengthy federal case against Lyndon LaRouche.

Software Runs MS-DOS Programs On A Mac II Without Extra Hardware

Insignia Solutions introduced a low-cost alternative to running MS-DOS programs on the Macintosh II. Instead of an add-in board, Insignia is offering a software package called *SoftPC* for the Mac II that emulates an IBM PC/XT under the as-yet-unreleased A/UX operating system. According to Thomas Billings, president of Insignia, *SoftPC* runs all major MS-DOS software without a hitch. Since A/UX is a multi-tasking operating system, you can run many MS-DOS programs at once with *SoftPC*, and files can be shared with A/UX programs. The cost is $595, and the program will be available in January 1988. Insignia Solutions, (415) 771-7001.

Aldus Upgrades PageMaker For The Mac And PC

Aldus Corp. showed eager COMDEX attendees its newest versions of *PageMaker*, the leading desktop publishing package for the Macintosh and IBM PC. Although the new support for color drew many oohs and aahs, Aldus was quick to note that inexpensive high-quality color printers were still years away. A more significant new feature in the programs is the support for style sheets. Style sheets allow you to set the formatting characteristics for a type of text (such as headlines or lists) once for the entire document. For example, changes made to the headline style sheet are reflected in every headline automatically. Another popular new feature was the ability to wrap text around irregularly shaped graphics. The programs will be available in February 1988.

Aldus also announced *FreeHand*, an illustration program for the Macintosh. *FreeHand* is an advanced drawing program that allows you to draw complex images for output on an Apple LaserWriter. According to Aldus, the program will compete with *Adobe Illustrator* and is much easier to use. Aldus Corp., (206) 628-2375.

Atari Attacks The High End Market With New Transputer

Atari recently showed a very-high-end computer that uses the Atari ST or Mega computer as a front end. The Abaq computer, based on a 10 million instructions-per-second Inmos T-800, will turn the Atari into a workstation that runs about ten times faster than an IBM PC/AT. Additional transputer boards (each which comes with four megabytes of RAM) can be added to the unit and will run in parallel. The system runs a multi-user, multi-tasking operating system specially designed for engineering and scientific computing. Like other workstations, the Abaq supports very-high resolution graphics at high speeds. Atari staffers at COMDEX predicted that it will be available by mid-year 1988 and will cost around $5000. Atari Corp., (408) 745-2000.

Genicom Announces New Laser Printer Architecture

Breaking away from the PostScript and PostScript clone market, Genicom announced a new, low-cost technology for creating text and images on laser printers. The new printer controller uses the ACE printer controller language (PCL) instead of PostScript or competing PCLs in order to greatly speed up printing and reduce the cost of the printer. According to Geniecom, ACE can print pages with 512K of RAM memory in the printer, compared to PostScript which often requires much more. Genicom showed preliminary versions of its printer software at COMDEX, including a

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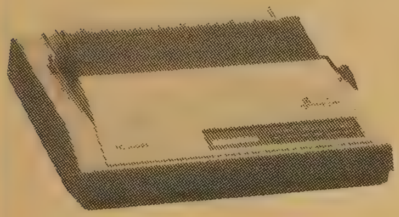

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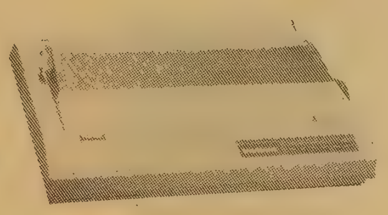

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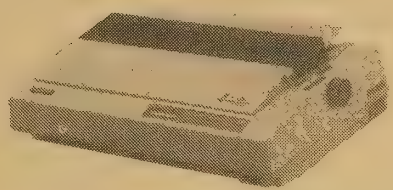

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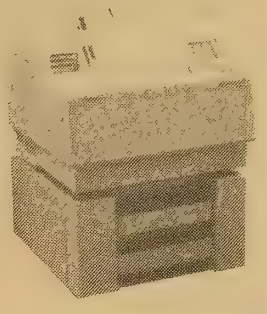

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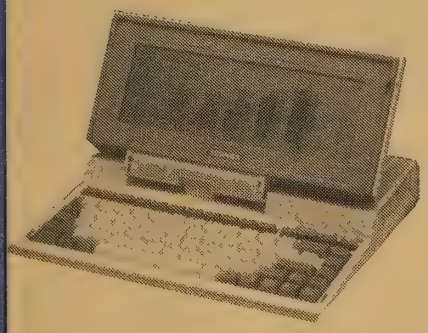

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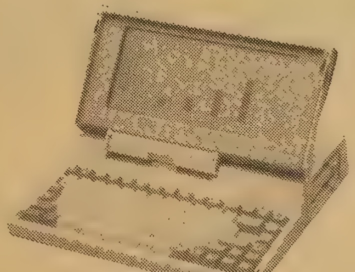

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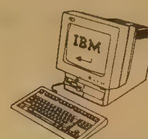

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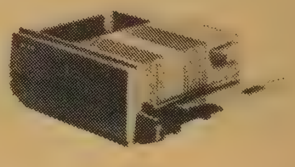

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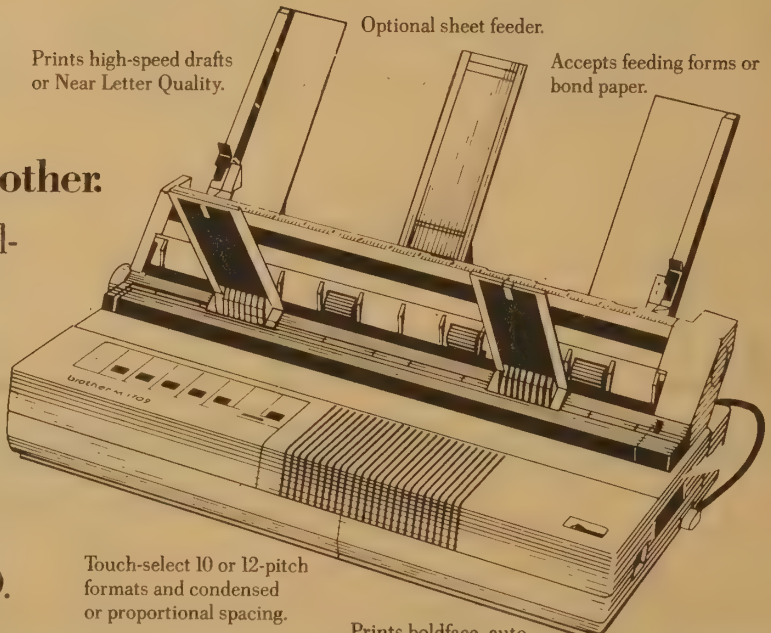

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brother.

QuickDraw driver for the Macintosh which produced 400 dot-per-inch, high-resolution pages with graphics at 8 pages per minute. They also displayed a driver for *Microsoft Windows*, with Aldus *PageMaker* printing complex pages at similar speeds. It said that it expects to announce printers using the technology in the next few months, and that the printers would be less expensive and have higher resolution than its competitors PostScript counterparts. Genicom, (703) 949-1188.

THEOS Debuts 386-Based Operating System

A new version of the THEOS multi-user, multitasking operating system now runs on 80386-based computers. THEOS 386 can handle up to 128 simultaneous users on a single system, and can address up to 4 gigabytes of memory. Although it has been perpetually overshadowed by CP/M, MS-DOS, and UNIX, the THEOS operating systems has survived since 1977 in niche markets and has a large following overseas. THEOS 386 is compatible with earlier THEOS products, giving it a base of hundreds of commercial applications already on the market. THEOS Software Corp., (415) 935-1118.

Lotus Previews Agenda

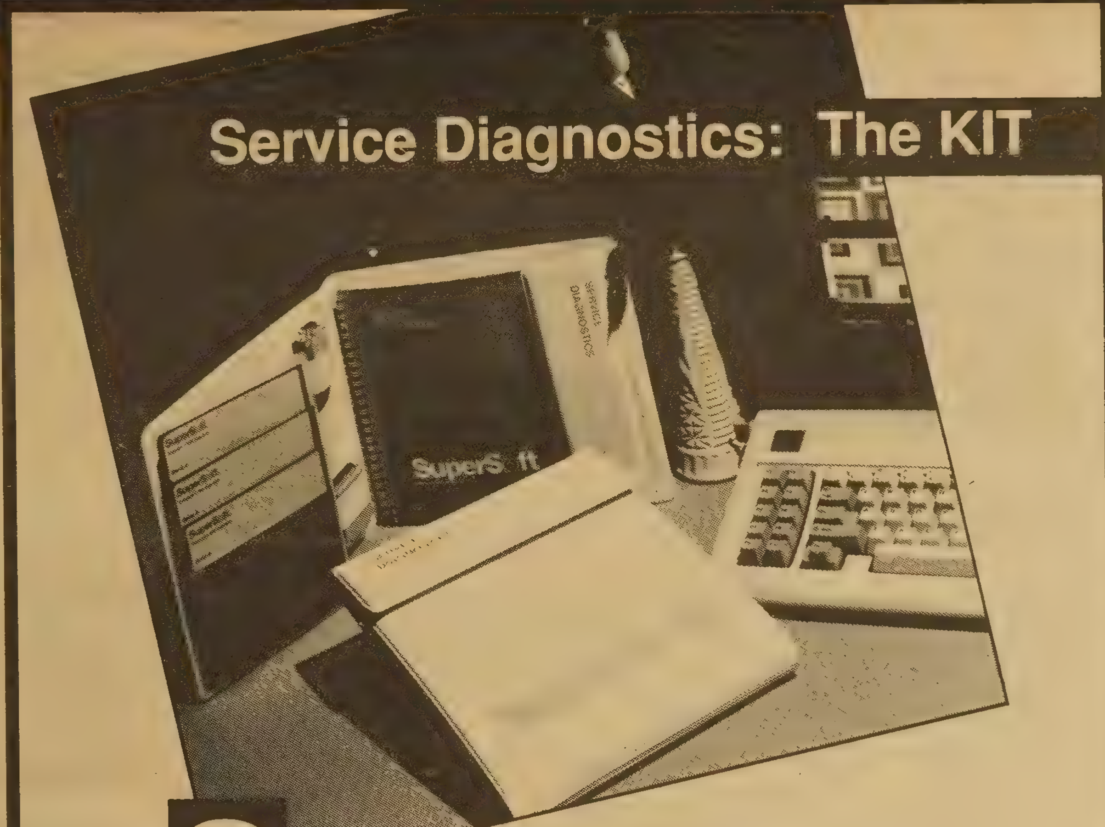
Calling it a "personal information management package," Lotus revealed its much-rumored next product at COMDEX amid a swirl of glowing pre-reviews. *Agenda*, which will be released sometime in the next eight months, organizes your notes, ideas, clippings, schedules, and other text-based information. Unlike current programs, which mostly give you a structure for your data, *Agenda* structures it for you using intelligent rules.

In *Agenda*, each item you enter in the program is an item that can be categorized by broad rules. For some things, you assign a category yourself (such as high, medium, or low priority). You can also use *Agenda*, however, to assign categories for you. For example, if you enter a note "See Jim tomorrow about the car," *Agenda* will automatically put the note in the category for Jim. In fact, if you have a category on dates, *Agenda* will look at today's date, add 1 to it (since the note was about tomorrow), and put the note in the category for things to be done tomorrow.

Like other data base systems, *Agenda* displays your data in a wide variety of ways. Similar to *Lotus 1-2-3*, the displays are in rows and columns. Unlike *1-2-3*, however, you can sort rows on the fly, showing totals or groups of information. During the COMDEX demonstrations, *Agenda* reorganized thousands of records in many different arrangements in under a second. *Agenda* will print to a wide variety of printers, and you can even customize its printer setup.

Two major features make *Agenda* stand out from other information organizers. First, it can mix information from a wide variety of sources. For example, you can read news items in from your modem and put them in the same information base as your notes to yourself. Unlike data base managers, you don't have "fields" to fill in. Second, you can attach notes to an item; *Agenda* only processes the information in the item. A note can be a memo, report, or other text up to about 10 pages long. Whenever you want to see the note attached to an item, it is readily available.

Industry observers were quite impressed with the demonstration. Esther Dyson said in her *Release 1.0* newsletter, "Like Lotus 1-2-3, *Agenda* has enough power and extensibility that users may well use it as an environment even though the system is not yet built to be used that way." Others noted with satisfaction that Lotus wasn't screaming "artificial intelligence" from the rooftops, even



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though there is a great deal built into Agenda.

In its first release, *Agenda* will be available for both MS-DOS and OS/2. Lotus mentioned Macintosh and *Windows* as likely next steps for *Agenda*. It will cost $395. Lotus, (617) 577-8500.

Xerox Uses Sun Chip In Document Processors

Sun and Xerox jointly announced Xerox's intention to use the new Sun SPARC chip and associated UNIX operating system in its future document processing products. The agreement was a mutual exchange: Xerox would use Sun hardware and software in Xerox's future products (as well as purchase off-the-shelf Sun workstations for its subsidiaries), and Sun would adapt its operating systems to support the Xerox Network System (XNS). The SPARC (Scalable Processor Architecture) chip is finding wide acceptance in the UNIX market based on its speed, flexibility for future enhancement, and open availability. The agreement will help Xerox spread XNS and help Sun sell more SPARC systems. Xerox, (213) 333-7000; Sun, (415) 960-1300.

Asher Announces Board For Background Fax Processing

The Asher Facsimile Division of Quadram is now marketing a PC board that allows you to send and receive fax while working on other programs on your PC. The board, called the JT Fax 9600, has its own CPU so that it uses very little of the host PC's processing. The software that comes with the board converts word processing and drawing files to fax format and sends them automatically with no additional intervention. Files that are received can be automatically stored on disk, viewed, or printed. Asher claims that this software makes its boards more useful than other background fax boards that use more of the computer's CPU and disk space. The board costs $795, and can accommodate a 1200-baud modem and *Mirror II* software for an additional $200. Asher Facsimile Division, (404) 564-5655.

Computer Dealers List Stolen Computers

In an effort to stem the tide of stolen computers being sold in the used computer market, the National Association Of Computer Dealers is setting up a toll-free number for checking the serial number of used computers before purchase. The NACD will collect and maintain a database of the serial numbers of stolen computers. According to the NACD, this is the first centralized data base of stolen computers. The lack of centralization has cost computer dealers millions of dollars each year since they have no way of checking whether a used computer is stolen or not except to call the local police department. If the computer was stolen in a different city, it is likely not to be on the local records. The hotline will be operational early in 1988, and the hotline's access number for the public is (800) 346-6223. National Association of Computer Dealers, (800)223-5264.

Publisher Seeks Nominations For Second Andrew Fluegelman Award

PCW Communications, publishers of *PC World*, *Macworld*, *Publish!*, and *Macintosh Today*, announced the opening of nominations for the second annual Andrew Fluegelman Award for programmers. The $5,000 award, named after the originator of Freeware,™ is given to a programmer who has made a significant contribution to software development. It will be given at the March

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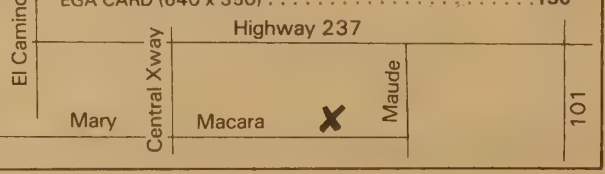

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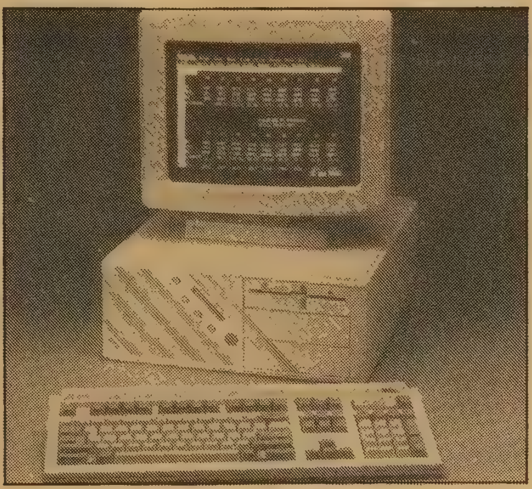

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The WYSEpc 286 Model 2108 is designed to provide the best value in a PC AT-compatible system. It is based on the 16-bit 80286 processor running at 8 MHZ (one wait state) and comes standard with 512 K, 1.2 MB internal 5 1/4″ diskette drive, serial/parallel adaptor and seven PC-AT-compatible accessory slots (five 16-bit and two 8-bit slots). The model 2108 is based on the WYSE Modular Systems Architecture, which allows you to increase your systems performance as your needs grow.

$1,384 **List $1,604 (includes WYSEpc 286 Model 2108 and enhanced AT-style keyboard)**

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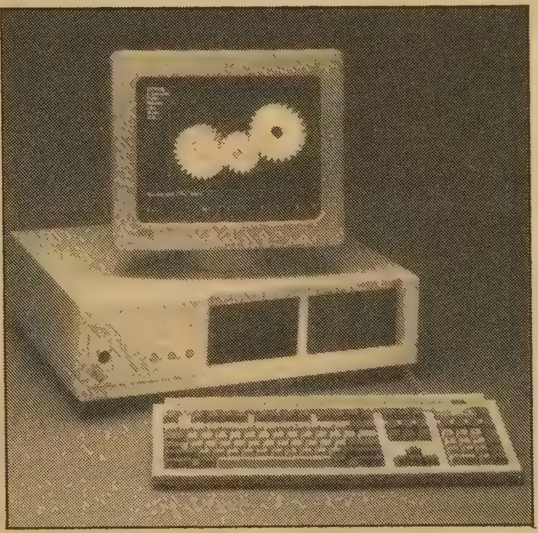
The WYSEpc 386 Model 3216 provides the computation power of a dedicated 32-bit supermicrocomputer for the price of a personal computer. It utilizes the 32-bit 80386 CPU Chip operating at 16MHZ and includes 1 MB RAM, 1.2 MB internal 5 1/4″ diskette drive, serial/parallel adaptor, socket for either 80387 or 80287 numeric coprocessor chip and six PC-AT-compatible accessory slots (four 16-bit slots, two 8-bit slots). The WYSEpc 386 is the ideal choice in applications that demand the highest level of performance.

$2,999 **List $3,804 (includes WYSEpc 386 and enhanced AT-style keyboard)**



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On The Firing Line

VGA — The Next Generation For Graphics

By Stephan Wickham
and the Diamond Software Technical Team

This month, we discuss the most important group of new products shown at fall COMDEX: display adapters and monitors. The new boards available offer more color, more accurate imaging and more versatility at lower prices than ever before. These are not tools for specialized applications, but display adapters that will become the new standard in most corporations. Along with these new display adapters are new monitors that offer brighter, clearer, more colorful images than ever before.

VGA (Video Graphics Adapter) is the new IBM graphics standard. It surpasses the EGA (Enhanced Graphics Adapter) by offering the appearance of an infinite number of color shades, which creates a very realistic image. The main difference between EGA and VGA (640 x 350, 16 colors) is that the VGA is analog rather than digital. An analog signal allows for an almost continuous range of shades for each of the primary colors, while digital is limited to a palette of 64 color combinations.

EGA is limited, even in its higher resolutions (640 x 480 or 800 x 600), to displaying 16 colors from a palette of 64. EGA also allows for only two intensity levels, bright or light. As a result, the colors are stark and allow little gradation or shading; they are rather like a comic book.

Through its analog signal, VGA is able to display each of its eight basic colors (black, blue, green, cyan, red, magenta, brown, and light gray) in 32 shades, for a total of 256 hues out of a palette of 256,000. This is why VGA images look much more realistic than EGA. The 256 color mode is available at the 320 x 200 resolution in VGA, and the lower resolution is more than offset by the vast array of colors that create a very striking photographic quality. The advantages within many graphic applications should be clear. VGA is a huge step away from the comic book colors of most of the previous color graphic standards. Over time, very-large-scale integration (VLSI) will bring down the price of VGA to a level where even home users will be able to afford it, just as is now occurring with the EGA standard.

The VGA card also produces beautiful text, which will set a new standard for business use. The more dots there are in a character matrix, the more smooth and readable the characters are. The VGA card changes to a 720 x 400 resolution format in text mode, with an expanded character set of nine by sixteen dots. This compares very favorably to CGA at eight by eight dots and EGA at eight by fourteen dots. VGA is the first color standard that the famed PC guru Peter Norton recommends for text use. How many of you are still trying to look at your word processing package on a fuzzy CGA monitor? Try VGA! It could be you don't need a new pair of glasses.

VGA also adds three graphics modes previously unavailable on the standard IBM EGA card: 640 x 480 in two colors, 640 x 480 in 16 colors and 320 x 200 in 256 colors. The IBM specifications state that all colors in any mode can be selected from a palette of 256,000 colors.

These are the new display modes:

1. Extended EGA. These boards offer the same resolution as the IBM VGA display adapter — 640 x 480; they do not include VGA drivers, however. They use TTL digital output, not analog.
2. Extended EGA with support for 16-color, 640 x 480 resolution VGA software. These boards have all the capabilities of extended EGA boards. Because they include drivers to support two of the VGA modes (640 x 480 in two or 16 colors), they also let you run most VGA business applications. These boards do not support the VGA 320 x 300 256 color mode. They use TTL digital output, not analog.

VGA is a huge step away from the comic book colors of most previous color graphics standards. It also produces beautiful text, which will set a new standard for video use.

3. BIOS-compatible VGA boards. These boards offer VGA modes in 640 x 480 resolution (in two or 16 colors) and 320 x 200 in 256 colors. They use analog output.
4. True VGA. This category includes many new boards, some of which are currently being shipped. These boards duplicate the hardware registers inside the IBM VGA in addition to being BIOS-compatible, which is a standard feature of the IBM PS/2 Models 50, 60 and 80. They use analog output.

Third-party manufacturers are currently extending the VGA standard to new heights. Orchid Technologies, for instance, has two new graphics boards that add modes which enhance VGA. The Orchid Designer VGA and Orchid Designer VGA-2 offer all the standard VGA modes, but in addition have 640 x 480 in 256 colors, 800 x 600 in 16 colors and 1024 x 768 in 16 colors. The Orchid Designer VGA is intended for IBM PC, XT and AT computers, while the Orchid Designer VGA-2 is for the IBM PS/2 Models 50, 60 and 80. The Designer VGA-2 for the PS/2s supports 800 x 600 in 256 colors. This will become a trend as other manufacturers try to one-up IBM by offering 256 colors in higher resolutions. The Designer VGA has a list price of $499 and the Designer VGA-2 has a list price of $699.

Paradise now is shipping an IBM VGA compatible card called the Paradise VGA Plus. It displays 800 x 600 in 16 colors and EGA, CGA, Hercules, MDA and Plantronics Colorplus modes. The VGA Plus lists for $399. Users with high level graphics needs can now get the Paradise VGA Professional card. It supports all the VGA modes and adds 640 x 480 in 256 colors, 1024 x 768 monochrome and has a 132 column mode. This card lists for $599.

Corporate buyers should note that NEC Home Electronics has upgraded the Multisync product line with an all new monitor, the Multisync II. This new monitor keeps the 800 x 560 maximum resolution and 14" screen, and has added new features that were badly missing on the original. Now users have the ability to display monochrome display adapter (MDA) and Hercules images on their color monitor. The Multisync II automatically holds the vertical dimension, rather than allowing the image to compress into a smaller and smaller rectangle as the resolution goes higher. The power switch and the controls for brightness, contrast, horizontal position, vertical position, horizontal size, and vertical size are now conveniently located at the lower front. There are additional switches located on the front to allow users to emulate amber, green or black-on-white monochrome monitors. The new Multisync II should continue to place NEC as the leading producer of color monitors for the corporate market. The Multisync II has a list price of $895.

NEC also has a super new monochrome monitor that should be the new monochrome standard in the smart corporate environment. The Multisync GS can display an image from MDA, Hercules, CGA, EGA, Extended EGA and VGA display boards. The Multisync GS automatically adjusts the vertical and horizontal scanning frequencies to match the signal coming out of the display adapter. This monitor is available in amber, green and paper-white versions. This Multisync is slick because, although it works in the standard black and white modes, it displays color modes by using up to 64 shades of gray. Corporate users on a budget could benefit from a combination of a display adapter such as the Everex EGA, Everex VGA or Boca EGA and the hot new Multisync GS. An EGA or VGA board from a third-party manufacturer supports the older monochrome modes, adds the advantage of color modes, and costs less than most classic monochrome boards (e.g. Hercules Plus by Hercules). The Multisync GS might be a monochrome monitor, but you can use your color software along with one of the new inexpensive color display adapters. The Multisync GS has a list price of $279.

If you have any questions about these products call Diamond technical at (415) 633-2588. We are at your service. If you need to order these or any other fine products, call Diamond Software at (415) 633-2588. □

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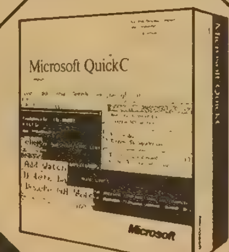

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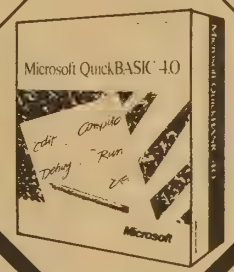

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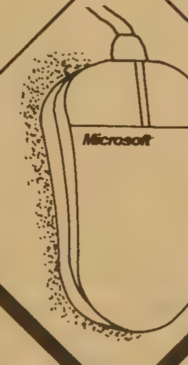

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1988 Software Publishers Association awards dinner. To qualify, a piece of software released between January 1, 1987 and December 31, 1987 must be nominated by someone not involved in its development. Programs are judged on advancement of the state of the art of personal computing, innovation in concept and design, and orientation towards personal computer users. The first award was given to Tom Jennings, the San Francisco creator of FidoNet. Nominations must be postmarked no later than February 1, 1988, and nomination forms can be obtained from Andrew Fluegelman Award, PCW Communications, 501 Second Street, San Francisco, CA, 94107, or by calling (415) 978-3367.

Borland Announces 80386-Specific Version Of Paradox

Paradox has become one of the first major application packages to be available in a version specifically tailored to the Intel 80386 microprocessor. Although many operating systems are being ported to the chip, few applications manufacturers have taken advantage of the chip's advanced structural features. *Paradox 386*, a data base management system, uses the 80386's instruction set to gain greater speed on instructions that are used repetitively in data base operations. Thus, *Paradox 386* runs much faster than *Paradox* on an 80386. In addition, Borland takes advantage of the 80386's larger memory capacity. Since most computers with 80386 CPUs have a megabyte or more of memory, *Paradox 386* can use this memory (up to 16 megabytes) more efficiently than other MS-DOS programs that are limited to 640K of RAM. The program costs $895 and will be available within a month. Borland International, (408) 438-8696.

Radius Announces Two-Page Display For Macintosh SE

Responding to the increasing desktop publishing, graphics, and CAD/CAM markets on the Macintosh, Radius Inc. is now offering a 19-inch display for the Macintosh SE that is capable of displaying two pages of text side by side. The Two Page Display for the SE shows 864 by 1152 pixels at 82 pixels per inch, more than four times the standard Macintosh screen size. The display comes with Radius' Tear-Off Menus software which allows you to use the SE's display to hold menus without obstructing the main display. There is also software to magnify parts of the screen and to change the size of the menus for easier reading. The display with its board for the SE's expansion slot costs $2,395. Radius, Inc., (408) 434-1010.

Lifetree Debuts New Groupware

Following Brøderbund's lead into the nascent area of group productivity software, Lifetree introduced *The TEAM*, an IBM PC program that lets groups of people on a network coordinate calendars, send electronic mail, and perform group project planning. The software helps groups of people collaborate by letting them schedule meetings and tasks. For instance, you can set up meetings for other people on a network automatically without worrying about conflicts. *The TEAM* also performs facilities management, so that a meeting room can also be scheduled for a meeting. The electronic mail is integrated with the calendaring system. *The TEAM* can be run both as a stand-alone and as a memory-resident program. It will run on IBM, 3Com, Novell, and other networks, and will be available in March 1988. Lifetree Software, Inc., (408) 649-3304.

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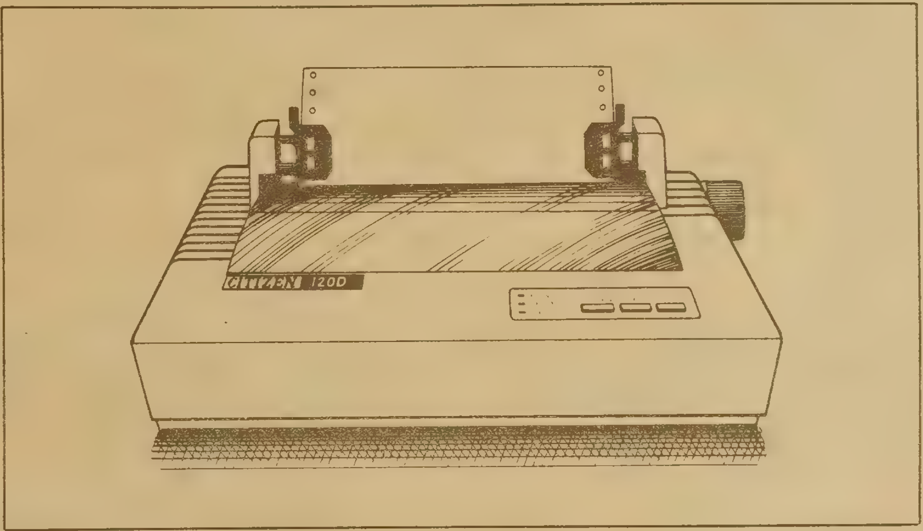

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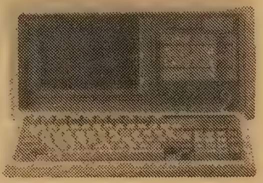

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REVIEWS

HARDWARE/ PERIPHERALS

RamStak Plus

A RAM Expansion Card with ROM Disk Capability for the Apple IIGS

From: *AST Research*
List Price: *$129*
Reviewed by: *Mike Markowitz*

To many veteran Apple II users, 64K still seems like a lot of memory. So the 256K that comes installed in the new IIGS might seem, at first, like a boundless ocean of RAM, a desktop spacious enough for multiple applications to reside together in harmony.

Think again.

The IIGS doesn't have the definitive version of its 16-bit operating system yet, but almost all the new applications that exploit its special features require 512K minimum, right out of the box. The forthcoming *Deluxe Paint II* for the IIGS from Electronic Arts will require a whopping 768K! A serious RAM disk application could require 800K more.

Back to the store again, cash in hand. You need a memory card. Not just any old slot RAM card, but something for the auxiliary slot that is directly addressable by the microprocessor. Apple offers a low-cost plain-vanilla card socketed for up to one megabyte. Other vendors offer higher priced cards expandable up to eight megabytes, with every imaginable bell and whistle.

AST Research, of Irvine, California has taken a unique approach to IIGS memory by offering a double-header card, the RamStak Plus, which combines up to a megabyte of dynamic RAM with the possibility of adding another half megabyte of ROM-based applications. A little-known feature of ProDOS allows the creation of "ROM disks" that are addressed like any other ProDOS device. ROM-based software is familiar to users of laptop portables, but it is something rather unusual in the Apple II environment.

There are two kinds of ROM chips that can be used with the AST card. EPROMs (erasable programmable read-only memory) can be programmed with a special device connected to the computer, and erased with an ultraviolet lamp (there is a little window in the plastic chip carrier.) Many user groups have an "EPROM burner" available for the use of members, and small ones are avilable for under $100. EEPROMs (electronically erasable programmable read-only memory) are more expensive but also more convenient. They can be programmed or erased through software. A software utility for this purpose is provided on the disk that comes with the RamStak card. EEPROMs can be programmed and erased directly from the software. For EPROMs you must create an "image" (binary) file and transfer it to an EPROM programmer plugged into the computer. EPROMs are installed on the RamStak card only after they are programmed.

The RamStak Plus provides for four banks of standard 256K, 150 nanosecond RAM chips, with eight chips per bank. The card is sold with 256K already installed. At this writing, some vendors were advertising these chips as low as $2.00 apiece in small quantities, but these prices were expected to rise as a result of trade sanctions against Japanese chip makers. You must "populate" or fill an entire bank at one time, but three banks (768K) is not an option, since this configuration causes some programs to crash. Most users will want the full megabyte.

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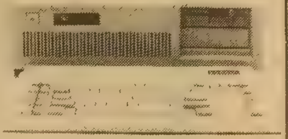

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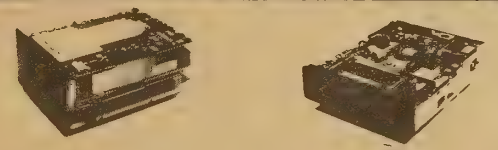

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The card itself is up to AST's usual high standards of workmanship, with gold edge connectors, and no telltale jumper wires or etch cuts indicating last-minute corrections of design errors. Bank zero—the first 256K of RAM—has chips soldered in place. Everything elese is socketed. Using an inexpensive chip puller (available from any neighborhood electronics store) it took only a few minutes to remove three banks of chips from my old SprintDisk card and install them on the RamStak Plus. A jumper block on the card must be set correctly before installing the card in your IIGS. This is clearly illustrated in the 100-page manual that accompanies the card. There are *two* jumper blocks for each of the four ROM chip sockets, which must be set according to the particular type of chip installed.

The 3.5" utility disk provides a RAM self-test to identify any defective chips. The software uses the standard Macintosh-style interface, with pull-down menus, dialog boxes, and attractive graphics. My techie friends advise running the self-test all night to burn-in new chips.

The IIGS manages slots and devices in a rather complicated way, and earlier version of ProDOS are not consistent. The manual does a good job of explaining what appears where. A RAM Disk, for example, always appears in Slot 5, with the volume name /RAM5. If a 3.5" drive is your startup device, it is seen as Drive 1, the RAM Disk is Drive 2, any ROM Disk is Drive 3, and the second 3.5" drive is Drive 2. Got that?

Appleworks Version 2.0 recognizes the RamStak Plus card, and automatically loads most of itself into the expanded RAM (except for those stubborn printer routines). Most unprotected 8-bit software can be copied to the card from the Desktop, and then run with a noticeable improvement in response time. RamStak Plus worked perfectly with every IIGS program I tried, including *Paintworks, GraphicWriter, Shanghai, Music Studio, VIP Professional* and *WordPerfect*.

At a list price of $129, the AST RamStak is a good value. Apple's own card lists for the same price, but lacks the ROM-disk feature. Expect to pay at least $50 more for chips to fully populate the card, if you install them yourself. The larger-capacity EEPROM chips are quite expensive, and may be hard to find, but for some users the convenience of having the operating system in ROM, instantly available when you turn on the computer, is worth the price.

DATA BASE MANAGERS

Notes.N.Files

Written by: *Gary Crandall*
Published by: *DataPak (1987)*
For: *Apple IIGS (512K)*
List Price: *$129.95*
Reviewed by: *Mike Markowitz*

Notes.n.Files is a simple personal database program for the Apple IIGS. It requires 512K of RAM and at least one 3.5" disk drive. The Apple ImageWriter printer is recommended, but output to a daisy-wheel (letter quality) printer is possible. The program is copy-protected, but it provides a hard disk installation utility.

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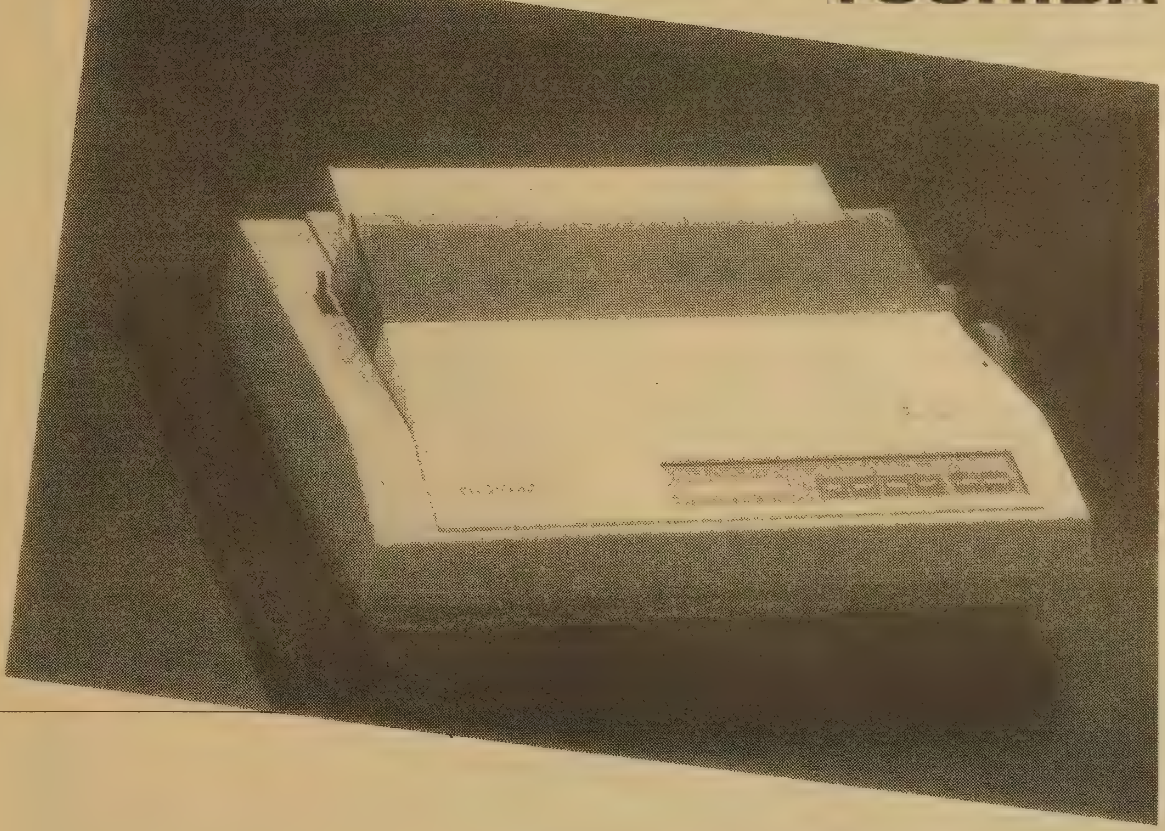

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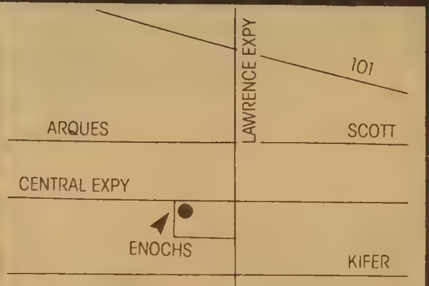

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on your computer unless it is really easier and more fun than filling out cards by hand and filing them in a box. *Notes.n.Files* is the first personal database program I have ever seen that represents a meaningful improvement over manual record keeping. It is the smoothest implementation of the "Mac" user interface on any new program I have seen for the Apple IIGS. Anyone who is familiar with the conventions of mouse pointing and clicking can use *Notes.n.Files* immediately. Error trapping is thorough, and dialog boxes are clearly organized. It works the way you expect it to work, and that is one of the highest compliments a reviewer can pay to a programmer.

The screen opens on a realistic image of a two-drawer filing cabinet. When you click the mouse on either drawer, it open to reveal a stack of file folders, in alphabetical order. Only about six folders are visible at one time, but you can scroll through the staack using the mouse, or search for a particular folder using the File menu. When you click on a file folder it blossoms into a window, giving you the choice of working directly with one of the documents in the folder, or with the "Folder Summary," a record that contains fifteen fields for data. Fields include Name, Company Address, Phone, Misc. and Comments. You can easily rename the fields, but not resize them. An 800K disk has room for up to 2500 records.

A series of icons across the bottom of the screen provide you with a supply of "stationery," indexes to the contents of the file cabinet, a "copier" for duplicating documents and the familiar trash can. When you open the Stationery window you can choose letter size, legal size, wide (132 column) paper, 3×5 card and empty folders. Double-click on the icon for a black sheet of paper and a complete word processor jumps out at you, ready for the composition of your document. You name a document when you save it, and a list of all the documents in a folder appears on the Folder Summary screen whenever you open a folder.

A pull-down menu bar across the top of the screen provides standard File, Edit, Font, Style, Format and Print functions. The menu functions can also be done with easy command-keystroke combinations. There is one desk accessory—a digital clock. In the present version of *Notes.n.Files* there are only two fonts: Bookman and Helvetica, each in 9, 12 and 18-point sizes. Styles include plain, bold, italic and underline. On the ImageWriter, printing makes several passes and produces text of exceptional quality. There is also a quick Draft mode that ignores font and style attributes. Future releases of the program may provide a LaserWriter printer driver.

Notes.n.Files can import *AppleWorks* database files (as text files) if they do not exceed 15 fields or 40 characters per field. Documents can be imported or exported as text files, with a loss of font and style attributes.

Mailing labels can be printed in several formats, and a mail merge capability is built into the program. You can drag a form letter through the Copier icon and it will insert the data from the frontmost folder on the desktop. A series of form letters can be printed using data from every folder in the cabinet, or any defined subset.

DataPak is a new company, but product support looks good. The first back-up disk is free to registered owners, and there is a technical support hotline.

A spiral-bound manual of about 100 pages is written in a friendly, informal style, and very well illustrated. Both the manual cover and the package art could be described as garish. This might discourage some purchasers, but it shouldn't. The program itself uses soft, muted colors very effectively. The well-made cardboard box contains a foam-padded insert to protect the program disk; a surprising procaution, considering the reputed

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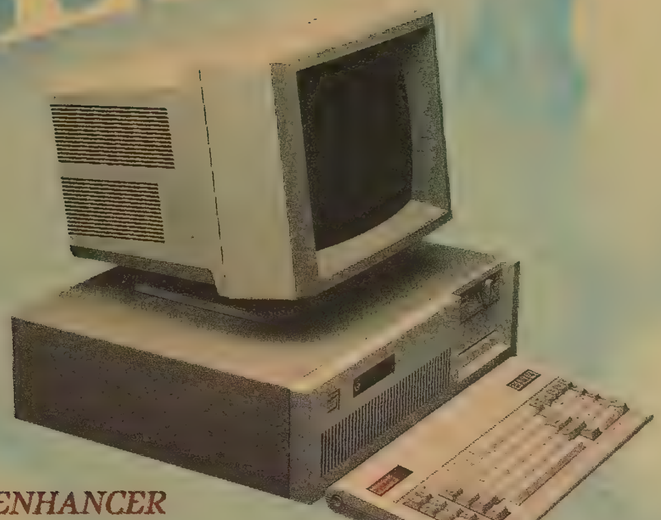

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I like *Notes.n.Files* so well that I have used it for most of my personal correspondence for the past month. My letters may not be any smarter, but they look better, and are, for the first time, ORGANIZED in file folders. This product would be an excellent choice for any IIGS owner with a small business or a large association to manage. It can also be recommended for students, writers, researchers and others who need to organize information in a readily accessible manner. (Data-Pak Software Inc., 14011 Ventura Blvd., #507, Sherman Oaks, CA 91423 818/905-6419.)

GRAPHICS

Paintworks Plus

Published by: *Activision (1986)*
Designed by: *Version Soft*
For: *Apple IIGS (512K) analog RGB monitor and one 3.5″ drive required, Imagewriter II printer desirable*
List Price: *$79.95*
Reviewed by: *Mike Markowitz*

Paintworks Plus was the first graphics package designed for the Apple IIGS. It could be described as "*MacPaint* with colors." And what colors they are! All of the 4096 colors that can be generated by the IIGS and displayed on the Apple analog RGB monitor are easily accessible, although only 16 can be used in any one picture.

All of the mouse-based *MacPaint* drawing tools are faithfully duplicated in *Paintworks Plus:* the pencil, brushes, spray can, eraser, paint bucket, etc. There is a very sophisticated color palette feature that allows you to mix various amounts of red, green and blue, and adjust the lightness or darkness of a color by moving "sliders" with the mouse. Up to 128 different sixteen-color palettes may be saved on the program disk and recalled. You might create a palette with ten different greens for a forest scene, or one with twelve different blues for a seascape. For monochrome printer output, you could even create sixteen different values of gray. The default palette, as you might imagine, includes mostly bright primary colors.

There are six pull-down menus. The only desk accessory right now is a clock. Several very clear help screens take the place of the quick reference card you might have expected. The file menu provides options to open, close, print or save pictures. Your picture is "Untitled" until it is saved. You can create file "folders" to store related groups of pictures. The edit menu has a vitally needed undo feature, as well as cut, copy, paste, clear, invert, flip and rotate functions.

Under the goodies menu, you can turn on an invisible snap grid, use "fat bits" (which magnifies a small portion of the screen to allow editing one pixel at a time), and perform other specialized functions. The color menu controls the palettes and lets you search for a particular color in a picture or dispose of one color at a time. The font menu provides seven fonts, six styles and six sizes for text. Many of the combinations are nearly illegible and others just look awkward or jaggy. This seems to be a common problem with the first wave of IIGS software.

Pictures can be saved to a 5¼″ disk, although they eat up a lot of disk space, depending on the format chosen. This is an undocumented feature, but an important one, since most IIGS owners will only have one drive of each size. "Paint format" saves only the current drawing window (320 by 200 pixels). Several public-domain utility programs have recently appeared that convert *Paintworks* bit-map files into other formats.

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A well-illustrated 148-page spiral-bound manual documents the extensive features of the program and provides a good tutorial introduction. There is a particularly good section on shortcuts and tips for experienced users. Many command sequences can be done more quickly from the keyboard than by pointing-and-clicking.

A simple page-flipping form of animation can be created by drawing a progessive series of pictures, saving them in a special compressed format and running them with the "show" command from the goodies menu. A bouncing ball sequence is included on the program disk as an example of animation. The speed of the animation can be adjusted with a slider. This is not nearly as convenient as the fancy animation techniques provided in programs like *Fantavision* and *Animate*, but, at this writing, there are still no other animation programs that take advantage of the color, speed and screen resolution of the IIGS.

The initial release of *Paintworks Plus* was criticized by several reviewers for being "bug-ridden." I experienced several crashes while working with the program, usually during file operations immediately after printing something. On several occasions when I attempted to print a second picture, the printer would only output lines of garbage and form feeds, and the only way to recover was to reboot. Some of the difficulty may be due to Apple's flaky 1.1 version of ProDOS 16. Activision acknowledges two reproducible bugs: one affecting the "lasso" tool, the other involving the "dispose color" menu option. A new release, version 1.01 fixes these bugs. Loretta Stagnitto, Activision's public relations manager told me that: "We believe we have made *Paintworks Plus* more impervious to random crashes and printing glitches by incorporating later versions of Apple's tools and print manager." Registered owners of the initial releases can obtain the upgrade by sending Activision the front cover of their program manual.

The program disk is copy-protected and there is no provision for hard disk or RAM-disk installation. After an initial 90-day warranty, replacement of a damaged disk costs $7.50.

Clip Art Gallery, a disk containing over 600 colorful images for use with *Paintworks Plus*, was recently released, at the modest list price of $30.

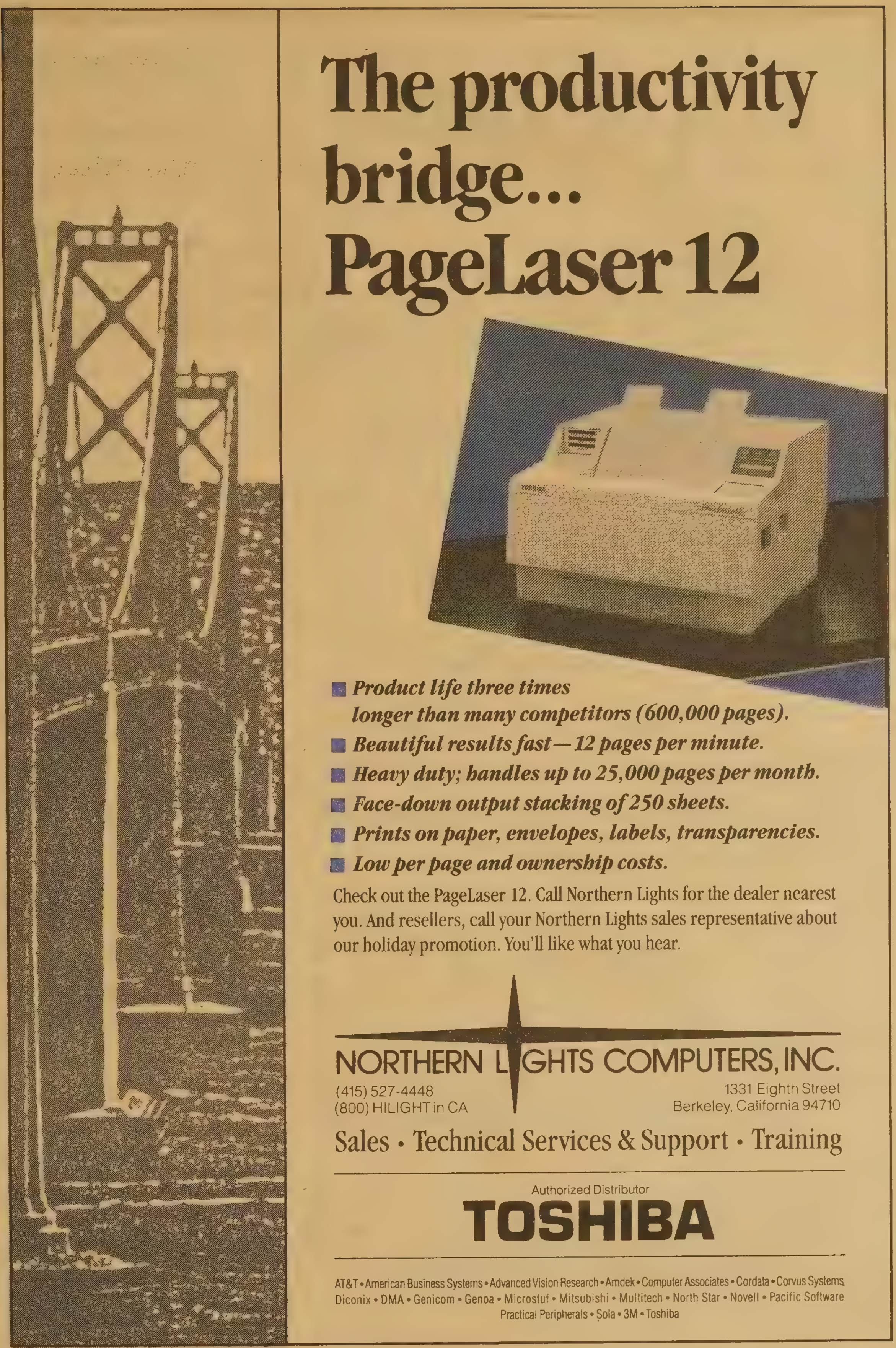
Paintworks Plus enjoys a market advantage because of its early availability, and the development delays suffered by its competitors. Apple IIGS owners are hungry for software, and will tend to snap up the first product in any category that hits the shelves. If the IIGS survives its present teething troubles, *Paintworks Plus* should live long and prosper. (Activision, P.O. Box 7286, Mountain View, CA 94039. (415) 960-0410.)

8/16 Paint

By: *Michael Darooge*
For: *Apple IIe, IIc (128K) for hi-res and double hi-res modes; Apple IIGS (512K) for Super hi-res 320 and 640 modes*
Published by: *Baudville (1987)*
List Price: *$75.00*
Reviewed by: *Mike Markowitz*

8/16 Paint was announced back in September, 1986 when the Apple IIGS was first released. The Apple IIGS version finally shipped in July, 1987, and the IIe/IIc version in November. It was worth waiting for: all the details came out just right.

The concept for *8/16 Paint* was very ambitious: one standard user interface and a consistent set of tools across all four Apple II graphic modes. This is a transitional product—the "8" stands for ProDOS 8, which is the current version of Apple's operating system for the IIe and IIc. The "16" stands for ProDOS 16—the evolving "Macintosh-like" oper-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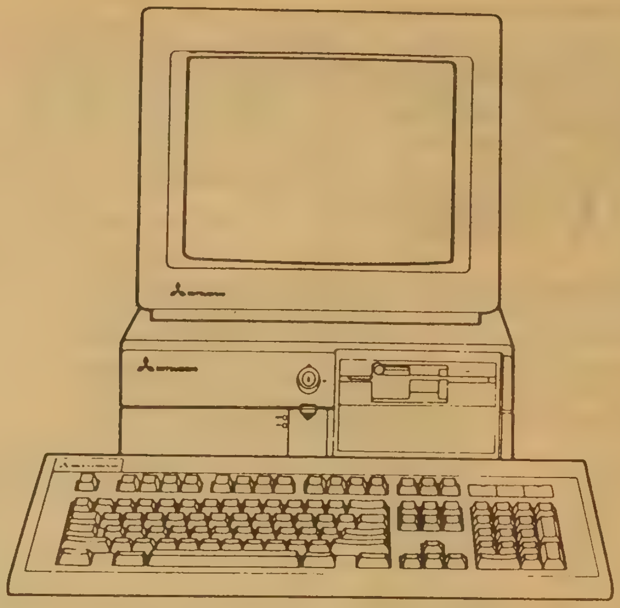

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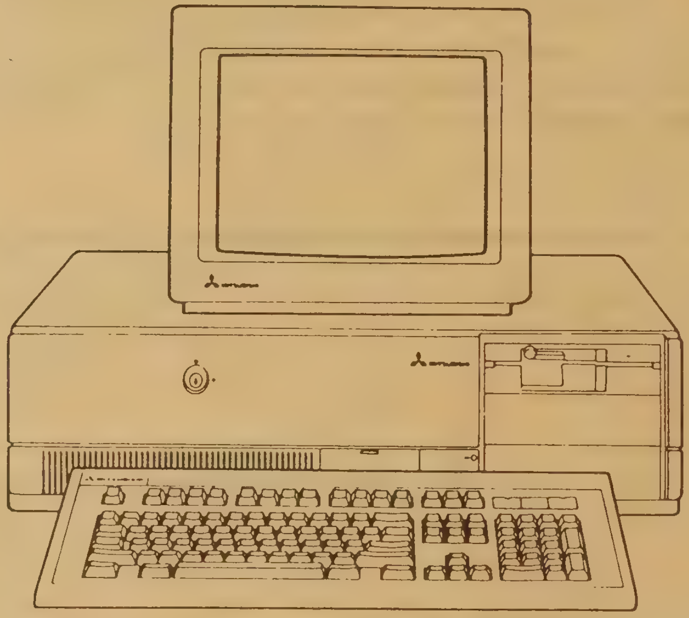

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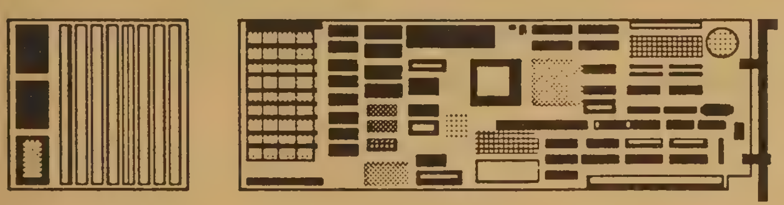

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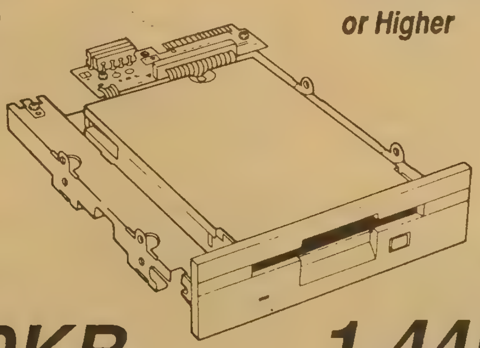

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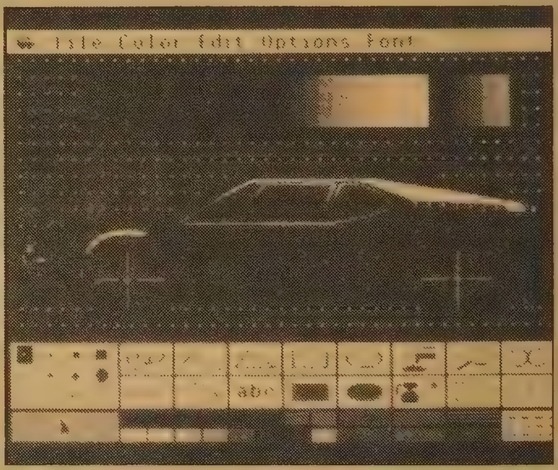
ating system for the Apple IIGS. The ProDOS 8 version comes on one side of a 5.25" disk, with high-res and double high-res graphics modes, while the ProDOS 16 version comes on an 800K 3.5" disk and includes the super high-res 320 and 640 modes. Early purchasers of the program had to send in a coupon to receive the ProDOS 8 version.

All versions closely follow the Apple Human Interface guidelines, which means they resemble *MacPaint* with colors. Everything works just the way you expect it to work, which speaks highly for Michael Darooge's skill as a programmer. All four modes require a mouse or compatible input device. The tool icons and the color palette box are grouped at the bottom of the screen (in contrast to most paint programs, which put the drawing tools in a panel to the left or right of the drawing window).

There are sixteen drawing tools, including two sophisticated curve tools — one draws a rubber-band conic between two points and the other plots a smooth spline through several points. The tool that draws an oval cannot be constrained to draw a perfect circle—you have to judge it by eyeball. A variety of keyboard options can be used to modify the effect of various tools. The box tool cannot be constrained to make a perfect square, either. You can select part of the screen with a "marquee" or selection box, and the ProDOS 16 modes also have a lasso tool, to select irregularly shaped areas.



8/16 Paint brings MacPaint-like capabilities to the IIc, IIe, and IIGS.

Depending on the mode, the color palette gives you four, six or sixteen colors, and a variety of dithered and multicolored patterns to work with. There are twelve brush shapes. There is a good selection of text fonts and styles, including some developed specifically for *8/16 Paint*. A "color cycling" feature makes it possible to create a simple kind of animation effect.

While *8/16 Paint* for the IIGS does not have all the exotic features of *DeluxePaint II*, it is much easier to learn and use. It also has a comprehensive set of printer drivers. Until recently, most GS owners had a stark choice of printers—the ImageWriter or nothing. *8/16 Paint* supports most Epson, Okidata, Star Micronics and similar dot-matrix printers, along with 26 different interface cards. You can print out an entire page (about two screens), or just the current screen. You can also print a "selection" — which is any area you have captured with the selection box. Color printing is supported on all printers that have this capability.

A file conversion utility makes it possible to convert standard high-res picture files to double hi-res or super hi-res. Double hi-res can also be converted to super hi-res. *8/16 Paint* can import super hi-res graphics from *PaintWorks Plus* and many other IIGS programs.

A 50-page spiral-bound manual is well-illustrated, concise, clearly organized, and indexed. The technical support phone number is printed

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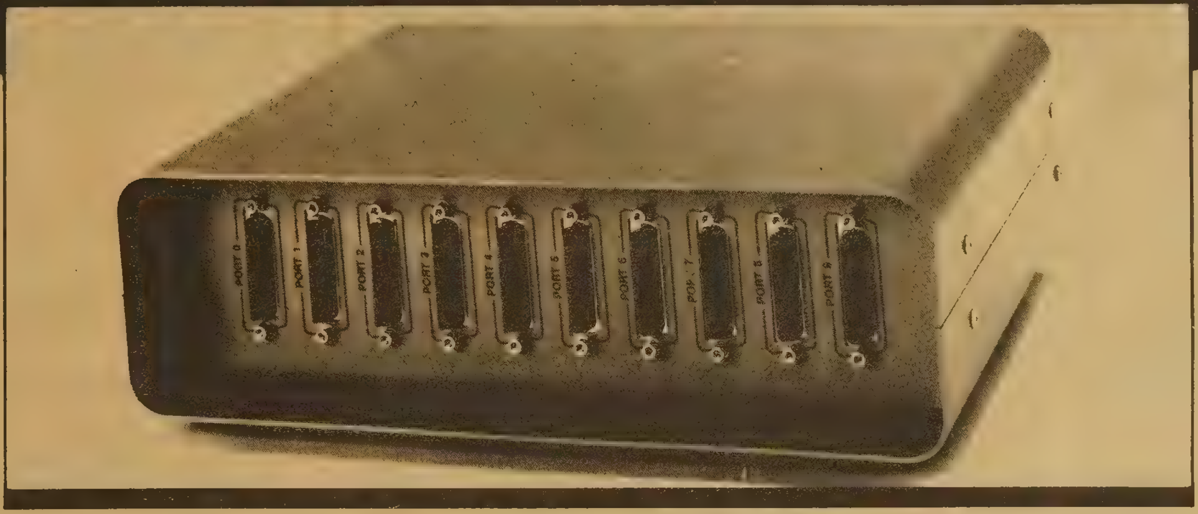

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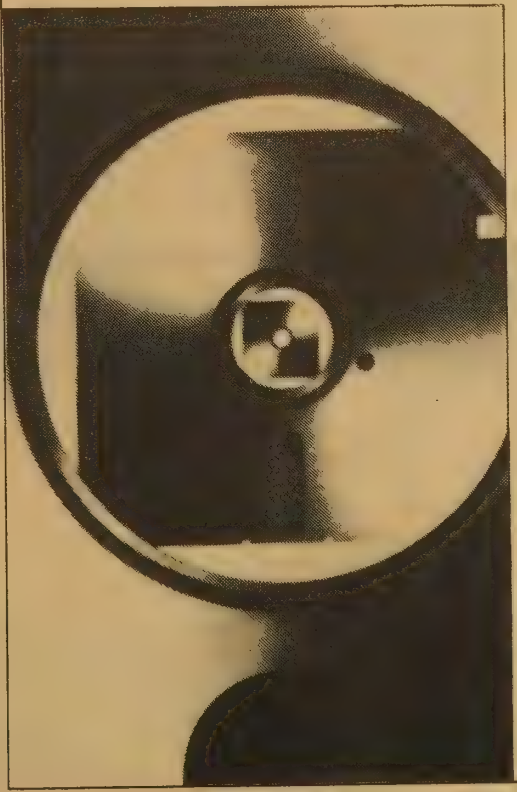

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right on the disk label; just the sort of thoughtful touch that earns publishers a place in User Heaven. Although the program is copy-protected, registered owners can obtain a backup disk for $10.

8/16 Paint would be an excellent choice for schools that are beginning to acquire the IIGS, but still have a large inventory of 128K IIe and IIc machines. For owners of 64K Apples, the best bet is still Michael Darooge's earlier program, *Blazing Paddles*, and if you only have 48K, *Graphics Magician* from Polarware is still highly regarded. (Baudville, 1001 Medical Park Drive SE, Grand Rapids, MI 49506, (616) 957-3036.)

GAMES

World Tour Golf

Written By: *Nicky & Evan Robinson and Paul Reiche III*
Published By: *Electronic Arts.*
For: *Commodore 64/128 (IBM version also available)*
List Price: *$34.95 Commodore (IBM $49.95)*
Reviewed by: *Sue Albert*

Always the last kids to be chosen for any team sport, I never completely outgrew the poor coordination and slow reaction time that now makes success at many computer games as remote as an Olympic gold medal. It is difficult to maintain interest in games where I rarely get beyond the second screen. I was therefore unprepared to find myself totally hooked on a game of computerized golf.

Electronic Arts first softened me up by installing a new fast loader on *World Tour Golf* for the Commodore 64/128 (Thank you God!). I was then bowled over by *World Tour*'s clever sound effects and super realistic graphics, with screens that redrew themselves quickly after each stroke. It took this slow learner only a short time to figure out the four step (keyboard or joystick) "swing meter" that determines the strength of your shot in the backswing, the downswing and that critical button-push which sets the balls accuracy. After an hour's practice on the "driving range" and another on the "putting range," I put in a whole evening of practice holes of 25 of the world's greatest golf courses and the seven imaginary courses like the beautiful EA Champion Course and diabolical Nasty Nine. At first my stroke count resembled basketball scores, but soon I had a double bogey (two over par), and then an occasional bogey (one over par). While the screen figure said "drat" and "frack," I was delighted to get within only three strokes of par and was elated when I finally heard the sweet "tweet" of a Birdie (one under par).

World Tour Golf lets you pick your player attributes. You can edit up to four players and create real or imaginary skill levels like drive distance, accuracy and the handicap for yourself and fellow players. After choosing a golf course you are advised of the weather and course conditions. A split screen puts you at the tee on the right screen, while on the left a bird's-eye view of the hole shows all landmarks, an indicator of your location and that of the ball, and a crosshair showing which direction the ball is aimed. You can choose among 14 clubs, pick your angle of attack and even get advice from an invisible "caddy" who draws an arc showing the range of the your club.

The manual, written in the familiar tongue-in-cheek EA style, is chock full of useful information about the game of golf with a glossary of terms, advice on club choices, many hints for improving play, and quotes from famous and infamous players. Having so many golf courses to explore means

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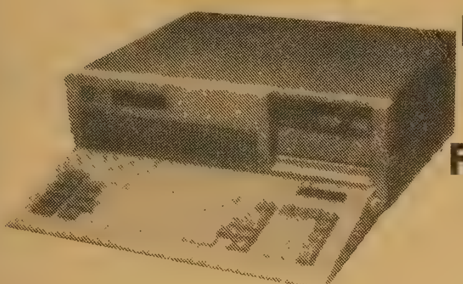

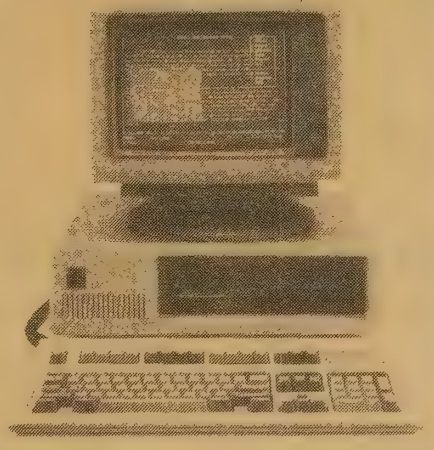

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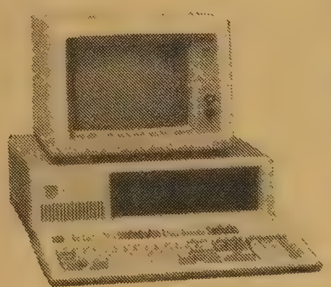

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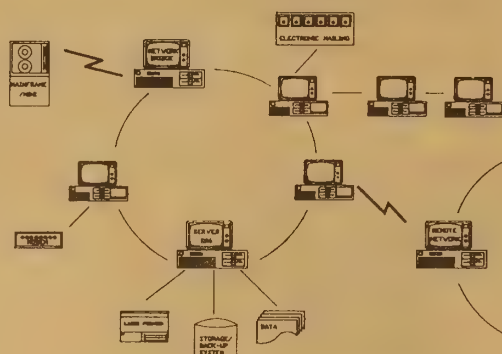

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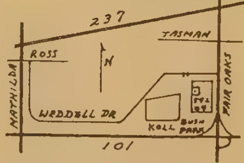

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months of happy play with this disk; however, should your finely-honed skills bring you to the edge of boredom, you can easily design and save a custom course using the knockout "Golf Course Construction" mode to create impossible waterways and forests of obstacles that will renew your interest and challenge your sanity. You could also construct a very easy course for a small child or hopeless duffer.

World Tour Golf is so well designed and bug free my three complaints are really nit picking. A few functions mentioned in the manual work only in the IBM version. You will find this short list on the Command Summary card. The disk won't load with my Cardco +G interface connected. Lastly, couldn't they have designed just one player as a female with a few leftover rib . . . Pardon, memory blocks?

EDUCATIONAL SOFTWARE

Reader Rabbit

By: *Leslie Grimm*
Published by: *The Learning Company (1987)*
For: *Apple IIGS (256K) one 3.5" drive required; earphones or external speakers desirable*
List Price: *$49.95*
Reviewed by: *Mike Markowitz*

When you consider how badly our alphabet represents the speech sounds of our language, it's a wonder that anyone ever learns to read. (If You Can Read This, Thank A Teacher.) Now that the Apple IIGS is turning up in more schools and homes, we are beginning to see some educational software that speaks in a recognizably human voice.

It doesn't say much, yet; because digitized speech is still difficult to program, and consumes enormous chunks of memory. In the early stages of learning to read, talking software should help reinforce the critical association between sound and symbol.

Reader Rabbit, from The Learning Company has been a success in schools and homes on a variety of computers (Apple, Commodore, Atari, IBM PC and compatibles). The new Apple IIGS version adds enhanced color graphics and high-fidelity speech to a series of four animated games designed to build early reading skills (ages 5–7).

The program will run on a basic 256K machine, but if you have a megabyte memory card, it will automatically load itself completely into RAM. This adds about 90 seconds to the startup time, but makes for much faster program operation. The program uses 16-color super-high resolution graphics, and limited but effective animation.

All the words in *Reader Rabbit* (over 200) follow the same three-letter pattern: consonant-vowel-consonant. There are four games that can be selected from the main menu. The sorter is a machine that pushes words across the screen, under a target pattern such as C−−. If a word matches the target pattern, you press the spacebar to stack the word on a shelf. If the word doesn't match, you let it fall into a trash can. You can change the speed of the game or the target pattern. The labeler presents three "shipping cartons" with pictures above three sets of scrambled letters. You use the spacebar and the arrow keys to label the pictures. The word train creates a sequence of four words that differ by only one letter from the previous word. When the "train" is filled, it pulls out of the station. Matchup is a memory exercise. There are twelve cards face down. There are six options. You can match pictures with pictures, words with words, or pictures with patterns. When you make a match that pair of cards is removed. You win by clearing the screen.

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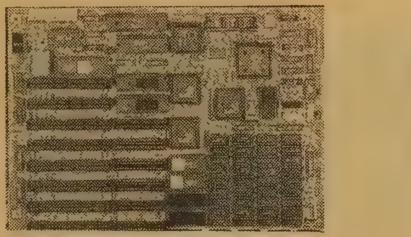

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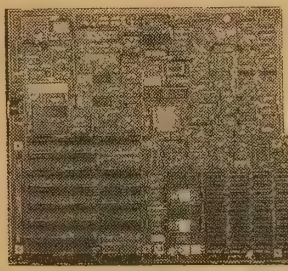

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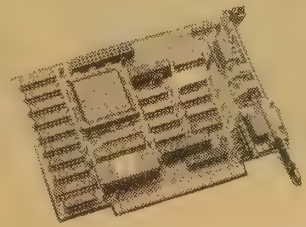

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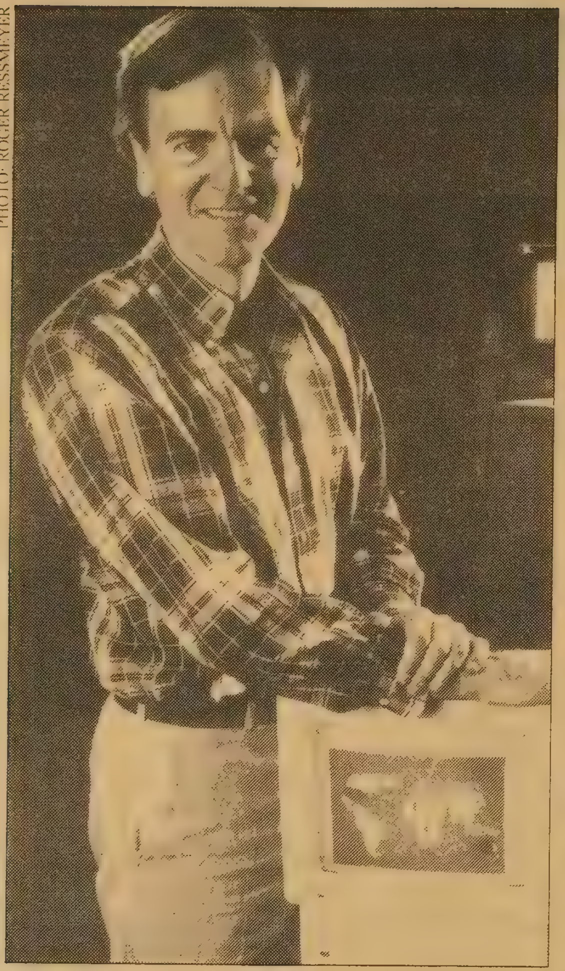
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An Interview With John Sculley

what make apple run

By Mary Eisenhart

Apple Computer's had a very successful year. Desktop publishing has functioned as, in vice president Jean-Louis Gassee's phrase, a "Trojan niche," winning the Macintosh first a foothold, then an entrenched position, in the lucrative corporate market. New-generation Macs have arrived, and a ground-breaking software "erector set" *HyperCard* has been released and bundled with all new Macs. The Apple II continues to thrive in the educational marketplace, and the new IIGS is winning wide acceptance. All in all, things are looking pretty good for a company many analysts had all but written off a couple of years ago. And while he'd probably credit the turnaround in Apple's fortunes to its individual employees, much of the change is due to president/CEO John Sculley's ability to fuse the company's visionary origins and obsession with the "insanely great" with shrewd marketing and a recognition of today's business realities.

Other computer companies will sell you a machine. Some of them might sell you a solution. Apple will do both those things, and rather well, but it's also selling you a piece of the future. Somewhere in his book *Odyssey*, Sculley makes the point that Apple's statements and presentations are necessarily heavy on metaphor and figurative language, because the essential business of Apple Computer is based on the development of things that haven't been invented yet. When you watch an Apple commercial, attend an Apple product unveiling or one of its traveling road shows, you're being invited to participate in a glorious experiment. When you buy an Apple computer, you're not just buying a machine, you're staking a claim to limitless possibilities. For Apple, the hearts and minds of its customers are at least as vital to the company's present and future as are their wallets.

When John Sculley arrived in 1983 as president and CEO of Apple, it was a startling development. He seemed a classic buttoned-down corporate executive (indeed, he was affably introduced to his new colleagues as "the guy from Corporate America"), albeit an unusually successful one who'd become president of Pepsi-Cola at the unheard-of age of 38 and was considered a likely successor to the chairman of all of PepsiCo.

However, *Odyssey* reveals another side to that stereotype — we see Sculley as the breaker with tradition, the maverick among the Suits, able to create successful marketing strategy around social change. The roots of Apple's masterful use of hoopla, for instance, can be found in one of Sculley's early triumphs, the Pepsi Generation commercials. A campaign to bring Pepsi a new image as the choice of the baby-boom generation, it used beautifully photographed scenes of often-astonishing emotional intensity. It shook up the formerly staid cola company and brought it hordes of new customers. As Sculley says in *Odyssey*:

> Suddenly we had a revived product and a whole new social group who identified with Pepsi as if it were a new religion. The commercials were successful because they articulated a lifestyle to which a new, more affluent, generation of Americans could aspire, a generation which, of course, drank Pepsi. It showed life as people want it to be, without complication or distraction — a young boy playing with puppies in a field or a cute little girl who dropped a piece of watermelon on her dress. The vignettes of life's "magic moments"...captured America's imagination. They evoked cherished middle-American values, of familial love and the innocence of children. The commercials subtly positioned Pepsi as the modern American soft drink, and by contrast, Coke as the old-fashioned cola.
>
> ...Marketing, after all, is really theater. It's like staging a performance. The way to motivate people is to get them interested in your product, to entertain them, and to turn your product into an incredibly important event.

Odyssey offers a vividly-drawn study in contrasts — the rigidly structured world of Pepsi, a highly competitive environment where Coke was The Enemy and careers made or broken over tenths of a percentage point of market share, compared to Apple's loose structure, impatience with convention, obsession with vision, and ongoing state of creative anarchy. It tells of the persistent attempts by Apple's mercurial founder Steve Jobs to persuade Sculley to assume the presidency of a young computer company, a campaign that finally succeeded when Jobs threw out the challenge, "Do you want to spend the rest of your life selling sugared water, or do you want a chance to change the world?"

The book chronicles Sculley's acceptance of the challenge, his growing friendship and philosophical affinity with Jobs, the disintegration of the friendship and peril to the company in the turbulent days of 1985 as the bottom fell out of the consumer market for computers. It continues with the reconstruction of the company to its current prosperous state, and paints a glowing picture of a future in which individuals have powerful, intuitive tools (Sculley postulates one called a Knowledge Navigator) with which to work and learn.

More than just another tale of life at the top, though, *Odyssey* offers a unique perspective on a world in transition. Not unlike Gassee's book, *The Third Apple*, released earlier this year, it evangelizes Apple's perspective on how the world, business and otherwise, is evolving, and what a forward-looking company can do to prepare for it. Thanks in part to talk-show appearances and other strategic promotions for the book, its message is reaching an audience far beyond the personal computer industry.

Apple is, in a sense, its own most important product, and Sculley has proved himself a master at making it "an incredibly important event."

What appealed to you about Steve Jobs' line about sugared water and changing the world? The typical successful corporate type probably wouldn't have cared at all — why did it work for you?

Because I was known to the outside world as the archetypal corporate executive, but I was really a romantic at heart. I had always been interested in things that had very little to do with business. I was interested in electronics when I was young, and I was interested in the arts. And to suddenly be posed with the choice of continuing the life that I had lived as a professional manager, or going off and doing something that was not only radically different, but much closer to what my earlier interests were, really hit home.

In 1987 we spent 191 million dollars on research and development. That's more than the research and development of Microsoft and Compaq and Sun and probably a couple of other companies added together.

What about the world needed changing?

I felt that there was a chance to do something that was different from the heavily institutionalized world that I was a part of. Here was someone [Jobs] who had no baggage at all from the industrial age, and was talking about a whole new age, the information society, and one in which Apple itself had made some significant changes — it created not only the company, it created a whole industry. And I was being given the opportunity to be a part of it. My sense was that we were just at the beginning.

You were pretty successful in the institutionalized world — why were you anxious to leave it?

I *wasn't* anxious to leave it.

But you did.

I think it caught me at a point where I was either going to sit back and enjoy the fruits of my work over the years, which is what most people in corporate America do at some point. But I was about ten years early — I was about ten years younger than most people are in corporate America who have that kind of position. So I wasn't in my middle fifties, I was in my middle forties. The idea of packing it in in my middle forties didn't make a lot of sense to me, and yet I couldn't figure out what else I wanted to do.

And then suddenly I was confronted with a chance to do something which was a complete unknown to me, and which I felt I was very unprepared for, but one which became extremely haunting almost, because it kept coming back to me time and time again as — maybe this is what I was *really* interested in doing. And maybe I never should have gone off to corporate America in the first place. It was only by accident that I really did.

Would it have been possible at the time you went off into corporate America for you to have done this?

Pretty unlikely, because it didn't exist. Silicon Valley was still apricots.

The reader discovers in my book that I was actually very much wrapped up in technology when I was young. I loved it — I never played with toys, I always played with parts from radios and took things apart — I was much better at taking things apart than putting things together (laughs).

What factors enabled Apple to come into existence at the time it did?

I think, like most success in the world, timing in life is everything, and Apple had extraordinarily good timing. Because if it had come out with these ideas ten years earlier, the technology wasn't ready to implement it.

Look at Ted Nelson [who created the hypertext concept in 1960].

Sure, look at Ted Nelson — there are a lot of people you could look at who had many of the same ideas, back in the 1960s, but the technology wasn't there to be able to implement it.

And Apple had just the right mix of people with its founders, and the right skills — Wozniak who could build it, Jobs, who envisioned the company, Markkula, who was savvy enough to be able to set the company up and get a strong board of directors, and Mike Scott, who could actually operate it. So they had, I guess, a combination of the right people at the right time. It happened to be not just the right time to start a company, but the right time to start a whole industry.

You spend a fair amount of time in your book drawing the distinction between second- and third-wave companies.

Well, the idea of second wave and third wave was first introduced by Alvin Toffler with *Future Shock*. It begins with the first wave, which was the agrarian society we had back in the 19th century, and then we went to the second wave, which was the industrial age, with factories and mass production.

Now we're in the third wave, where the natural resources are no longer strategic as they were in the industrial age, meaning oil and coal and iron ore and so forth. Today the strategic resource is information. In the information age, the technology ramp is so rapid that it requires people to take tremendous risks in order to be successful.

So the characteristics of a third-wave company are very different from a second-wave company. In a second-wave company we look for size, market position, stability, self-sufficiency and vertical integration. It's largely a world of competition, competing for a share of existing markets that are growing relatively slowly.

In the information age or the third wave, we see that flexibility and focus on, not the quality you can afford, but the best quality that can be built, are key aspects of succeeding. And we're not really trying to compete for an existing market, we're trying to build brand new markets, often using technology to define the products that will shape those new markets.

So the whole thrust of leadership shifts from the John Wayne model of the leader who is invincible to a new definition of a leader who has to be willing to not only take risks, but make mistakes, learn how to recover from those mistakes, and then not lose their courage to go on and take additional risks. And so I wanted [in *Odyssey*] to show the vulnerability of leaders, that they had to be more human than they were in the industrial age, because they don't have the fallback safety net of large institutional structures to sort of prop them up and to make them look better than they really are.

> When I first came to Apple, I asked, "How are we going to exchange data from one personal computer to another?", and someone threw a floppy disk across the room and said, "That's all we'll ever need." With a standalone vision, that's all we ever did need. But clearly that's not where the world's headed.

How is Apple structured differently from the more conventional companies you came from?

The big difference is that Apple is built around the idea of a network, rather than around the idea of a hierarchy. A hierarchy which is modeled after either the Catholic Church or the military models is the traditional form of organization in a corporation in the second wave. In the third wave a network is a better metaphor, because what it does is legitimize a thing that always existed informally anyway.

We know that even in the most traditional corporations the informal network is really where most transactions happen, and where most ideas are passed from one group to another. In third-wave companies, which are really idea-intensive, which are driven by the success of your ideas and turning them into products, it's even more important to legitimize that informal network. So you'll find that there's very little emphasis on layers in the hierarchy; there is little emphasis on titles, little emphasis on corporate perks, and a lot more emphasis on communications. So at a company like Apple — just yesterday we had a communications meeting with over 3,000 people. That would be something that would just never happen in a second-wave company.

People don't have to buy into the vision in a second-wave company, they have to buy into the policy manual. Policy manuals don't mean very much in third-wave companies. What people want to know is, are they committing themselves to something that's going to make a difference, and are they going to have a chance to actually be a part of it. Those kinds of questions rarely come up in a second-wave company.

What advantages does this approach give Apple over some of its competitors?

I think the obvious comparisons are with companies like IBM and AT&T. AT&T is probably the archetypal hierarchical organization, and look at the difficulty they've had making the transition from a public utility into a competitive private enterprise company trying to compete in the computer industry. It's reported that they've lost in excess of a billion dollars a year for several years in the computer industry.

I think that what many thought would be the undoing of Apple Computer just a few years ago, which was AT&T's size, their huge research capabilities with Bell Labs, has not turned out to be the case, because large institutions don't have the flexibility to change quickly. They don't have the ability to make decisions rapidly. And we know that in the personal computer industry things are happening so quickly that the more agile you are, the more driven by a vision that is understood throughout the company, the more likely you are to be successful. I think even IBM, which has been recognized by many people as one of the finest corporations in the world, has had difficulty making that transition. Because IBM, even though it's a high tech company, is clearly a second-wave company, not a third-wave company.

You also introduce the concept of culture vs. genetic code in companies.

Well, we've heard so much in recent years about corporate cultures, and yet culture is an idea that looks backward. It has the historical context of saying, this is where we have come from, this is the set of traditions that the company has. That is probably more relevant for a second-wave company that doesn't have to look forward, but is designing its plans basically as extensions of what it's already done in the past.

The problem is that in the third wave we are creating brand new companies, brand new markets, brand new technologies, brand new products, and therefore you want to have a way of establishing an environment that people can not only recognize, but one which is going to be extendable into the future, not just have its roots in the past.

So I prefer the metaphor of genetic code, which says there are certain characteristics, certain values, that a company has to recognize from its earliest days, and if you can define what those characteristics are, then you look for those characteristics to be present regardless of how large you may get, or how complex your business may get in the future. Just as the genetic code stays with us throughout our lifetime, as the cells in our body change every seven years.

I think that what I'm trying to do is get people to think about values, more than culture, and think about values in terms of how you take the best characteristics and extend them into the future, but also have the flexibility to recognize that the

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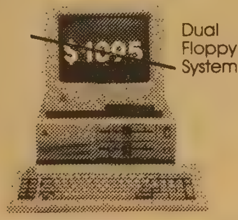

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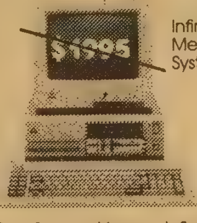

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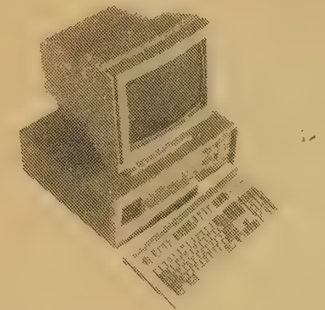

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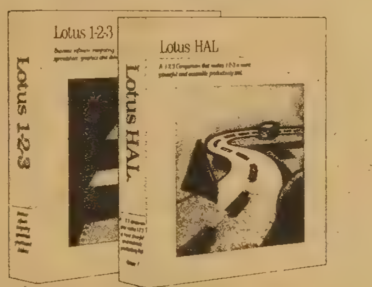

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company's going to be constantly changing, constantly reinventing itself. That's something which is hard to reconcile when you're looking at culture, which is so tradition-bound.

From the perspective of now as a point in a long evolution, what do you think the essential messages in Apple's genetic code are right now?

I think that Apple's code starts with a vision, and the vision is that we're going to change the world by focusing on the individual and giving individuals incredible tools that are based on technology. And that these tools will be powerful enough to change individuals' behavior, the way they think and communicate and learn. That's the essence of Apple's vision.

Then the values, which are the other part of our genetic code, are that we must be able to attract very talented people who are going to be creative, and give them an environment where they can be able to be extremely successful. So it means an environment which is going to put more emphasis on the individual, more emphasis on small teams, than it does on the traditional issues of control and process that you find in large organizations.

Consequently, regardless of how large Apple gets, I believe the company will always have a right-brain tilt to it. It'll always appeal most to the people who would have a hard time finding any other corporation that they would ever want to go to after working at Apple. They might go start their own companies — that happens in many cases. But the likelihood that they would go to another large corporation would be extremely remote, because Apple does put such an emphasis on attracting people who care about the creative side of business.

But in the course of attracting such people you also introduce a considerable chaos factor, right?

Which is the duality that we're finding — not only in business, we find it in the sciences.

I often look for guidance, not from other business people, because there aren't very many role models, but I look for guidance sometimes in very unsuspecting places.

As an example, if you look at some of the new physics concepts — for instance, Heisenberg was able to demonstrate that the more you know about a particle's position, the less you know about its velocity. The more you know about its velocity, the less you know about its position. So what we are learning is that it is possible for things to have a duality to them. Einstein amongst others, and Maxwell, pointed out that light is both a particle and a wave, so it can have two existences at the same time.

That's what I think we're finding in the new corporations, that you've got to have an existence which focuses on creativity and gives the individual a great deal of freedom, but you've also got to have a sense of order. And the order doesn't mean control, it doesn't mean rigid policies or hierarchy — what it does mean is that there has to be an environment which allows things to be free, but also have things headed in the same direction.

Directions become very important in a third wave company, not necessarily goals as tightly defined as in a second wave company, but more of a Taoist idea, that the further you head in that direction, the more you learn about where you want to go, and you're constantly pushing the ultimate destination further and further out. And that's almost what we have to do in a company like Apple, because we can't say specifically what our world is going to be like five years or ten years or 15 years out, but we know the directions we have to head in, and the further we make that journey, the more we never actually reach the destination. We're constantly pushing the destination out.

> **We have chosen not to license our technology, and have no intention of doing that in the future. IBM used somebody else's technology, Microsoft's, and now is finding their share of market being consistently eroded by the clones.**

Well, those are ideas, whether they come from system cell theory in biology, or whether they come from Taoism or holistic ideas in thinking about the world, or whether it's new physics, that are actually better metaphors and better role models for things that we're doing in business. Now, if I were to go back and tell my former colleagues in corporate America that we were using Taoist ideas and holistic concepts in management they would think that I'd been in California too long (laughs).

What's the thinking behind Apple's continuing policy not to license its technology and to keep it all proprietary?

We have chosen not to license our technology, and have no intention of doing that in the future. The evidence that we think that that's right is to look around us. Look at IBM, that used somebody else's technology, Microsoft's, and now is finding their share of market being consistently eroded by the clones. Not only is their share of market being eroded, but the whole value of their technology is not well understood, because the clones don't invest in any research to create new technology, all they do is come in and copy what's already there. For the industry, that's a losing strategy. As we saw with the Macintosh's success in desktop publishing, by taking the technology path where you can do things in a better way, you can actually create brand new markets.

It was during that very time in 1986 that Apple was starting to grow with desktop publishing, that we saw the rest of the industry languishing. There *wasn't* much growth in personal computers in 1986. It's only been in 1987 that the industry started to see real growth again, and it's coming primarily when we see new technology breakthroughs.

From our standpoint, we believe that we have a unique opportunity, because we're the only personal computer company, including IBM, AT&T, Compaq, or anybody else, that owns its own technology — for CPUs, for printers, and for all the systems software that we do, which includes workgroups. What we want to do is show that we can continue to innovate by having the control over our own technology, not having to be paced by what someone else is doing.

At the same time, we know it's a multi-vendor world, and we have to be able to integrate into that world, and consequently we are adopting more and more standards, but they're standards that are in the background, that aren't obvious. They could be printing standards, like PostScript, or they could be networking standards like Ethernet, or they could be other standards like the ISO model for communications, or it could be the connectivity into the IBM world through token-ring standards. We don't have to create the standards, though in some cases we've helped do that, but what we really have to do is to make sure that the individual isn't working with standards, that the individual is working with something that's recognizable to them.

Our innovation is totally focused on the man-machine interface, with a lot of standards in the background. We think that we could never afford the proprietary technology that we have unless we knew that we could retain the value of that technology. Because the crown jewels for Apple isn't our hardware, the crown jewels for Apple is our systems software. In 1987 we spent 191 million dollars on research and development. That's more than the research and development of Microsoft and Compaq and Sun and probably a couple of other companies added together.

Is HyperCard part of this strategy of supporting the individual and creating an individual work environment?

I see *HyperCard* as one of those extraordinary technologies that somehow got left out. Remember, almost every technology that we have on the Macintosh was created in some form long before Apple Computer was ever founded. At a lot of places.

What we had to look at, as we went out to the 1990s, was, were we going to have all the right root technologies that we could build on in the future? And the one that seemed obviously missing was hypertext. Because hypertext was a way of simplifying the one thing that had not become very human, and that was databases. Databases still required you to be a computer expert in order to do anything useful with them. You had to program in some language.

So what we did was, we said hey, this is the technology that got left out, so now we've got to find a way to bridge it in. Fortunately, Bill Atkinson, one of our real superstars, was excited about hypertext and was able to create a technology that went beyond an application, but really had the potential of becoming, over time, part of our systems software. And so what you're seeing today is the Mac 128K version of *HyperCard*. In other words, it's just the beginning of where we think we can take *HyperCard*.

Why did you go to bat for Bill Atkinson on the subject of bundling it, which was a somewhat controversial decision?

To me it was never even an issue. It was logical that if this was really going to be something that was going to be important as a technology platform of systems software, that you had to make it standard with every computer that was out there, or people wouldn't incorporate it.

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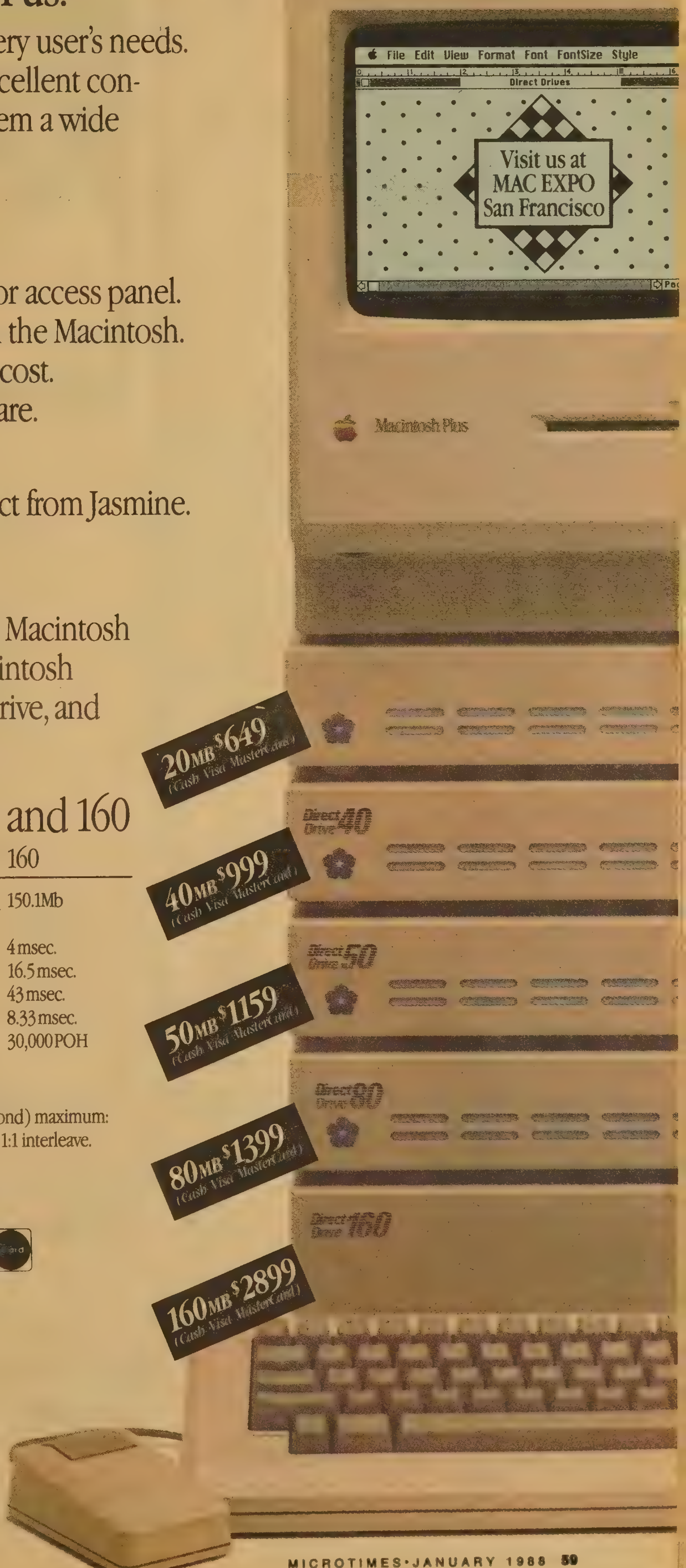
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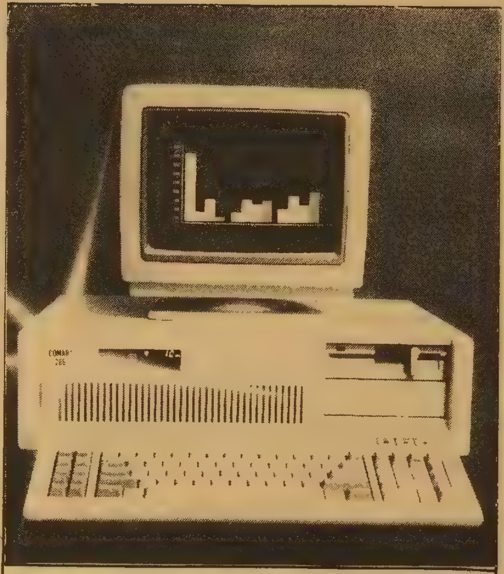

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What happened to the notion of one person, one computer?

One person, one computer has never been abandoned. What we have tried to do is broaden our bandwidth of what that idea means to say, that it can't be one person, one computer, isolated from the world, but it's got to be one person, one computer, *connected* to the world. The importance of connecting up to other computers, connecting up to other people, connecting up in a multi-vendor environment, is one of the big changes. So I'd say we say one person, one computer, connected up to the rest of the world. We've added an extension to that vision, which actually adds probably the essential requirement in order to succeed long-term.

When I first came to Apple, I asked, "How are we going to exchange data from one personal computer to another?", and someone threw a floppy disk across the room and said, "That's all we'll ever need." With a standalone vision, that's all we ever did need. But clearly that's not where the world's headed.

Originally Apple was very strongly focused on the home/consumer market. How did you become disenchanted with that?

Well, the only logic I think that anyone can use to say why Apple would have ever recruited someone who knew almost nothing about computers, and only had had experience in marketing to consumers, was that the idea was that Apple was going to build a very successful consumer products company. And as we've seen, the personal computer industry has not turned into a consumer products industry. To the contrary, there have been billions of dollars lost by a large number of companies, some of whom aren't even around anymore, just in the years that I've been in the industry.

What we have discovered is that getting computers into people's homes doesn't necessarily mean that you're going to get them to actually use the computers. Today we don't try to sell computers to people unless they have an idea in mind what they're going to do with them. So that we sell to home education, but it's because people know that they can run the software their kids are using in school with Apple IIs. Or we sell to the home office because they know they can run a business out of their home or they can use it as an extension of their office office computer work. But we don't try to convince anybody that they ought to balance their checkbook or keep track of their recipes or things like that. As farfetched as that seems, that's really how the personal computer industry was talking to people only a few years ago.

So the main areas you see growth in are education, higher education and mainstream business, is that correct?

Yes. It's not that we don't sell computers to individuals, because we sell a lot of them. It's not that there aren't computer enthusiasts amongst

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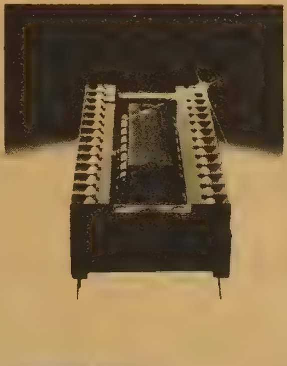

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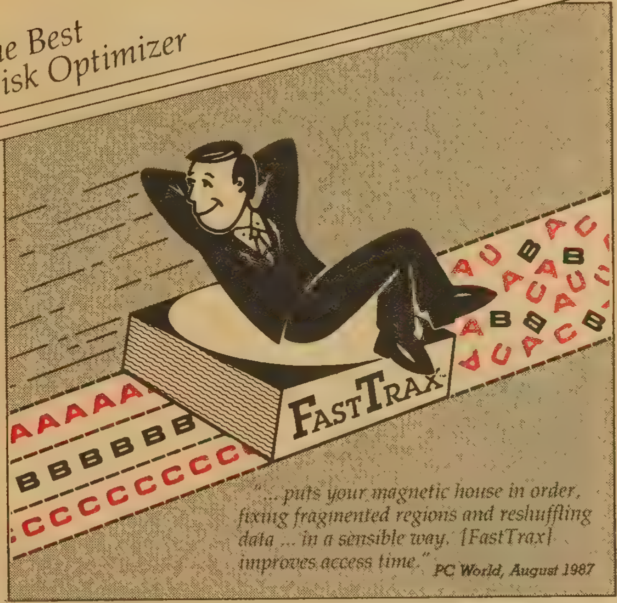

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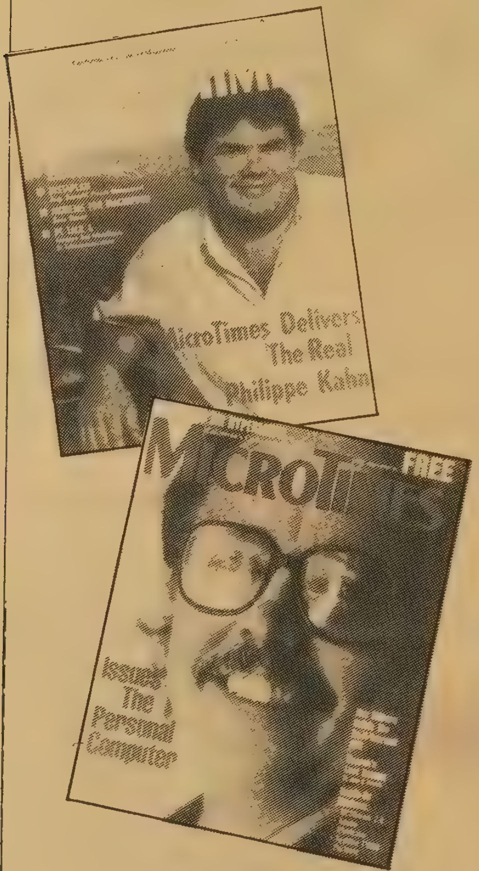
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them, because we have a lot of enthusiasts, as is evidenced by the strong support we have from user clubs around the world. But it's like Willie Sutton said when asked why he robs banks — because that's where the money is. (laughs)

And it's true with computers — most of the money spent on computers comes from business and from government. And, because of Apple's special interest in education, it's logical that we continue to grow our position, not just in K-12 but also in higher education. So that gives us a very fertile marketplace to focus on, but it's meant a total repositioning of the company.

We were a home computer-education company two years ago. We're now a business-education company, and probably the best evidence of the repositioning of our company is how the marketplace has valued us. In the summer of 1985 our market value was around 850 million dollars. And before the market meltdown we reached, I think, something like 7.5 billion dollars. Even today, we're still well over five billion dollars in market value. It all can be attributed to the work of a lot of people at Apple. This wasn't a turnaround of any single individual, it was a lot of people at Apple buying into the idea that we could reposition the company, and do it in a shorter period of time than any other company had done that before.

Do you have any problem with the elitism that's inherent in that strategy? Aren't you aggravating the information rich/information poor dichotomy by going after the big-money markets, which is certainly different from the Two Steves/Homebrew vision?

Well, I think that what technologists should do is to build the absolute best tools that we possibly can, and then it's incumbent on all of us in society — not just the technologists, but also the business people, the educators, and the government leaders, to then figure out how we make sure that we don't create a class society with haves and have-nots.

But to compromise the products so that nobody gets a product that's going to make a difference, to me, is not a good fallback. I think we have got to get people excited, that we can do so much in changing people's behavior, in revolutionizing our education system, by creating tools that can offload a lot of the monotonous work from the teacher, to have more time for teachers to spend with the students, to take a heterogeneous society as we have, perhaps, in California more than any other area in the world, and say, how do we leverage the strengths of those differences that people have so they can learn at their own pace and in the way that they learn best?

These are the things that we can solve with technology, and if we solve them in the best possible ways, then I think it's going to become more obvious to our government leaders in particular that they can't give benign neglect to education. My sense is that the revolution of education will have to start with the technology tools. It isn't trying to compete with books any more, because students really don't read that much. It's trying to compete with video arcade games, with MTV, with special effects films, and so we've really got to introduce the entertainment value in learning, and make it as enjoyable to learn as it is to do any of those other choices.

Therefore, to compromise the technology just to make it cheap, I think, would be like shooting ourselves in the foot. Because we know the technology is constantly getting cheaper, but we need someone to fund the development of it, and the only people that are going to fund the development are the big markets that have a real need for it in terms of improving their productivity, such as business or such as government. Eventually it'll allow us to get the cost of that technology down, so that we can introduce those ideas into education. But education as a market by itself couldn't possibly afford the research and development costs that we have to spend to get these kinds of breakthroughs.

How successful have you been at convincing educators and legislators of all this?

I think it's amazing how well understood these ideas are when you get down to the local level with teachers, even all the way up to — for instance, a few days ago I was meeting with the president of the Los Angeles Unified School District, and they really understand. Bill Honig, who's the superintendent of education in California, understands. Where it breaks down is when we get to the elected officials above that. For some reason they are fast on the cliches, but they're hollow on the answers in terms of what they're really going to do to make education better.

In our own state of California we have been slipping like a landslide in terms of our rankings of where we stand with the other 49 states, and yet we're not even putting in as much investment in education percentage-wise as we were a few years ago. We're trying to rebate it back to the population.

I think those are very short-sighted decisions our politicians are making, and if you go up to the national level I think the decisions are even more short-sighted. We're trying to, in effect, disassemble the Department of Education and essentially just hope it'll all go away, and somehow it'll solve itself through a non-regulated environment, and I think that's very naive.

continued on page 128

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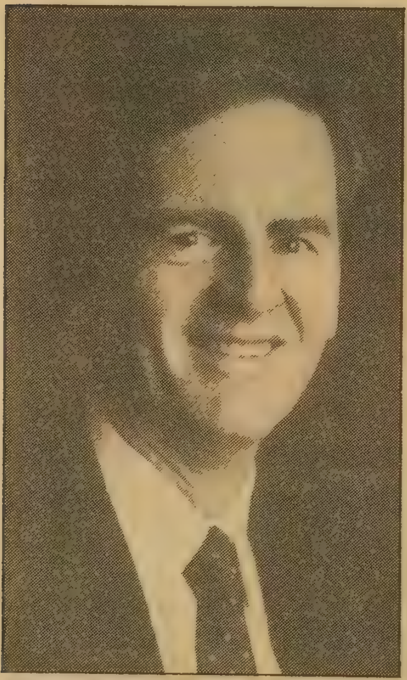
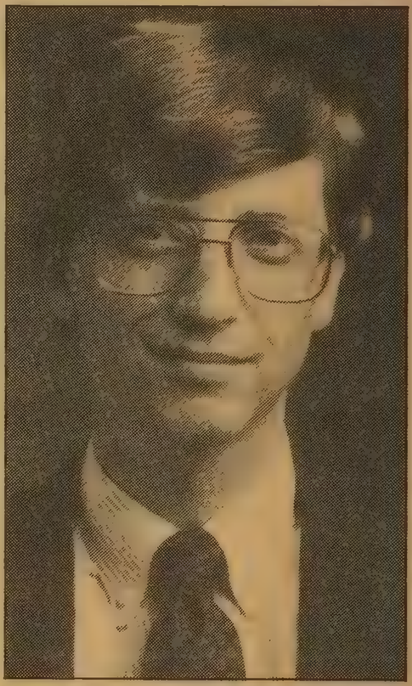


JOHN SCULLEY
Apple Computer
Chairman and CEO



BILL GATES
Microsoft
Cofounder and Chairman

From the time the first nominations for this year's list of industry leaders started arriving in our mailbox, electronic and otherwise, it was obvious that Microsoft's Bill Gates and Apple's John Sculley were leading the pack. To users and vendors alike, the personal contributions of Gates and Sculley to their companies' continued evolution profoundly affected the industry's direction and prosperity.

In a sense, our two Men of the Year demonstrate that it's possible to succeed in the microcomputer industry with nearly diametrically opposed strategies and philosophies. Microsoft's strength is its software, Apple's its hardware. While both companies show strong commitment to enhancing productivity and power, their approaches are radically different.

Sculley, who explains his views in this issue's cover story, has steadfastly kept Apple a company of intense in-house development and sophisticated proprietary technology, a company which has resisted considerable pressure to license its technology to vendors of lower-cost machines. One of Apple's great strengths is its ability to infiltrate existing markets and create new ones with inventive technology — consider, for example, the genre of desktop publishing, which propelled Macintosh into the Fortune 500 and, in classic turnpike-effect fashion, brought a whole new market into existence.

At the same time, Apple's launched an aggressive campaign for connectivity, in the realization that its computers will always exist in a world of other machines and operating systems. It pleased its third-party vendors by creating Claris, a soon-to-be-independent company which will market current existing Apple applications and new packages. Third-party vendors weren't so pleased with Sculley's decision to bundle *HyperCard* with all new Macs, on the grounds that it has some application-like qualities, but Sculley insisted on wide distribution of *HyperCard* as a development platform for future hypermedia implementations on Apple machines.

Gates and Microsoft, on the other hand, have long espoused the philosophy of industry standards, open architecture and strategic alliances. The result is a microcomputer industry in which a highly diversified Microsoft has its many eggs in multiple baskets and is positioned to take advantage of future directions.

"Whatever happens, Microsoft wins," *PC World* publisher David Bunnell has remarked on occasion, and with good reason. Already the purveyor of industry-standard MS-DOS, Microsoft is working with IBM on OS/2, the graphics-based operating system for IBM's new PS/2 line. Further, it's allied with AT&T to market UNIX and XENIX multiuser operating systems in the PC environment; its programming languages are perpetual bestsellers; its application packages for PC and Macintosh continue to arrive in newer and more powerful versions, attaining huge popularity in both markets.

Microsoft's long-awaited *Windows* graphical interface operating system for the PC arrived and became the environment of choice for the power user. This fall Microsoft announced *Windows/386*, which brought the *Windows* environment to the 386 machine and, perhaps more importantly, fully exploited the capabilities of the 32-bit 80386. *Windows/386* was launched

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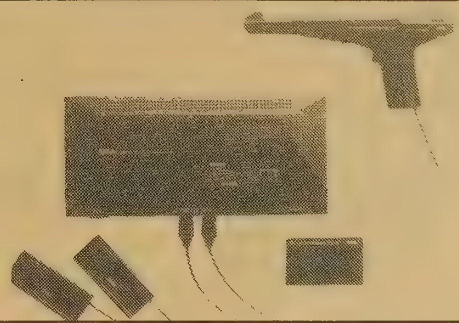

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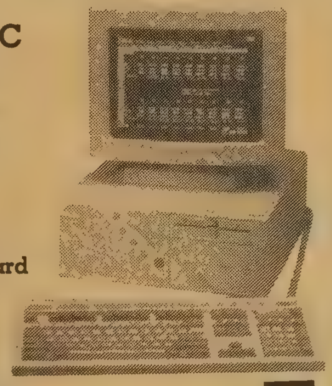

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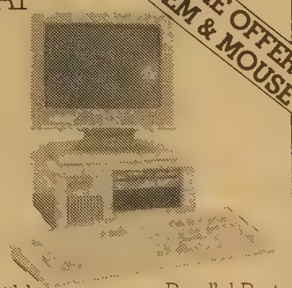

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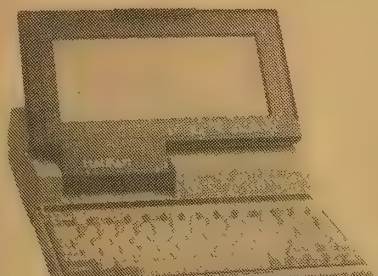

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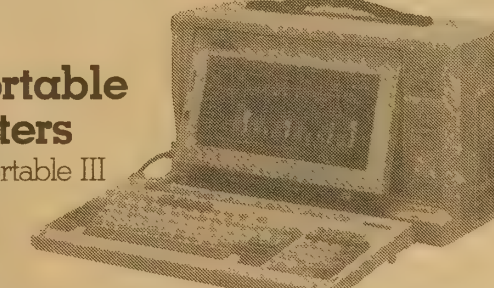

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amid a show of support from hardware vendors, including 386 standard-bearer Compaq and a host of software developers.

Microsoft also remains committed to exploring new possibilities, most notably with its sponsorship of an annual conference on CD-ROM technology and its publication of its own CD-ROM products.

Gates himself certainly ranks among the wealthiest and most powerful leaders in *any* industry, and is actively involved in the operations and strategy of Microsoft. He also manages a fair amount of contact with the users of Microsoft products, making frequent appearances at events from huge conventions to tiny user group meetings, affably presenting slide shows and discussions of Microsoft's strategy for maintaining its diversity and industry dominance well into the next century.

While MS-DOS, OS/2, XENIX/UNIX, *Windows* in all its incarnations, *Word*, *Excel*, *Works* and a myriad of other software products would insure Gates a comfortable position at the top of anybody's list, including ours, we have another reason — a brief exchange at a recent meeting of the Silicon Valley Computer Society, where Gates had brought the Microsoft Traveling Road Show for the evening.

The hall was filled with users and developers who obviously relished the opportunity to grill the chairman of Microsoft, and Gates appeared to enjoy the religious controversy and theoretical debate. Finally one user stood up to complain that the newest release of a Microsoft application, which he'd been using in its various forms for years, no longer included a driver for his printer, which had been a perfectly standard machine back in the days of the IBM PC, nor did it allow the user to write his own driver. Looking positively horror-stricken, the startled Gates said "That's not right..." Pulling out a pen and paper, he took the man's name and the relevant details, and pledged to deal with the problem as soon as he got back to Washington.

Somehow, we like that.

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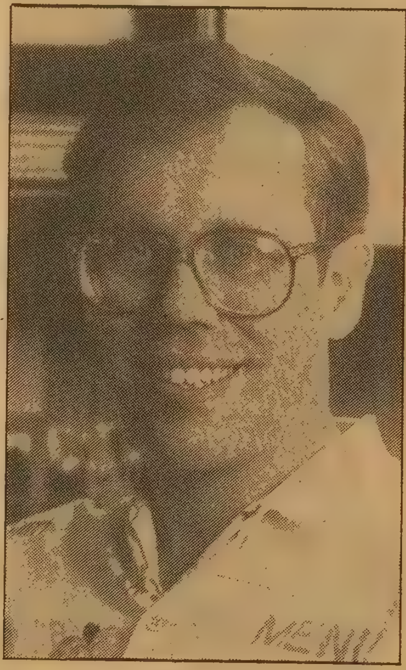


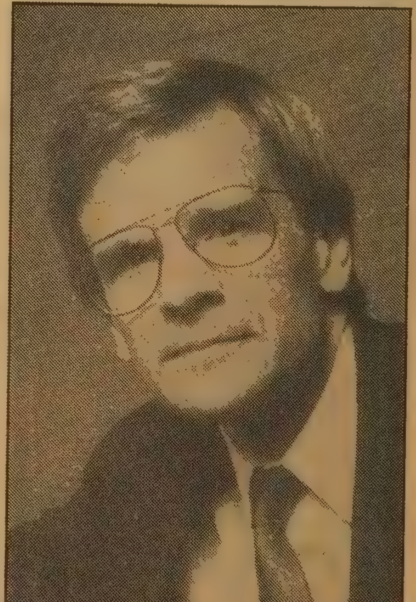
BILL ATKINSON

Apple Computer
Apple Fellow

Some time ago, Bill Atkinson, who was working on *HyperCard* at the time, went to talk with John Sculley. Atkinson, author of *MacPaint*, had been unhappy with Apple's decision to unbundle *MacPaint*, and was concerned lest *HyperCard* meet a similar fate.

As Atkinson continues in Danny Goodman's *Complete HyperCard Handbook*, "He [Sculley] talked it over with the executive staff and let me give a presentation. I said, 'What I want is to bundle it. If you want to bundle it, I'll write it for Apple. You can have the exclusive proprietary rights and all that stuff, but if you don't want to bundle it then it's time for me to graduate from Apple and go on and be an independent developer myself. I'm going to get this out to people whether I give it away or whether I get Apple to give it away.' To this day Apple is not required to bundle it. They only have an option that if they choose to accept it, then they have to bundle it. They could say no to me right now, but at least then its ownership reverts to me so that I can give it away, which I would do. You see, I want it to be given away so that it can be a base for people to share."

The story speaks for itself. We think both the product and Atkinson's outlook are highly commendable.



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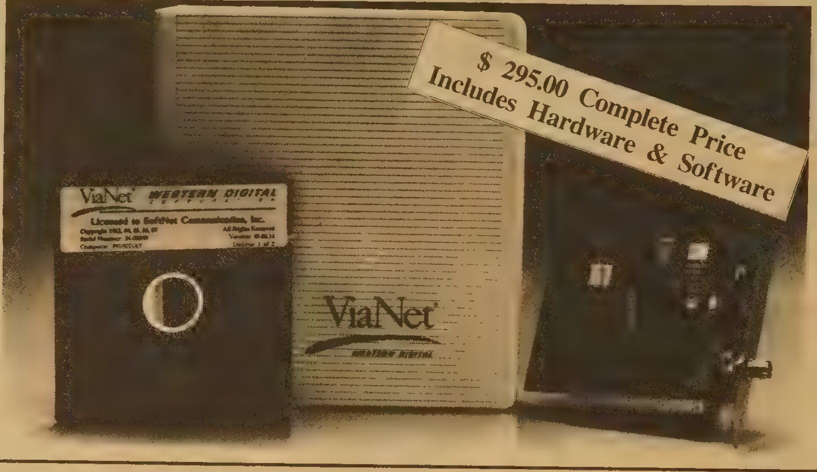

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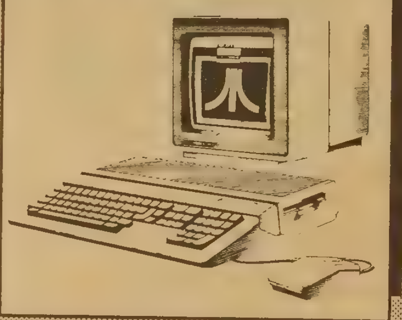

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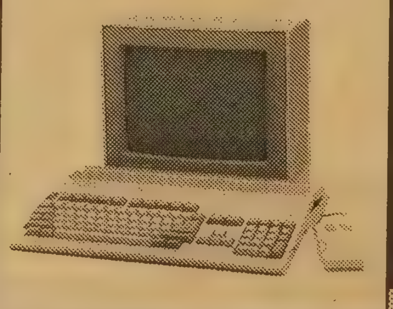

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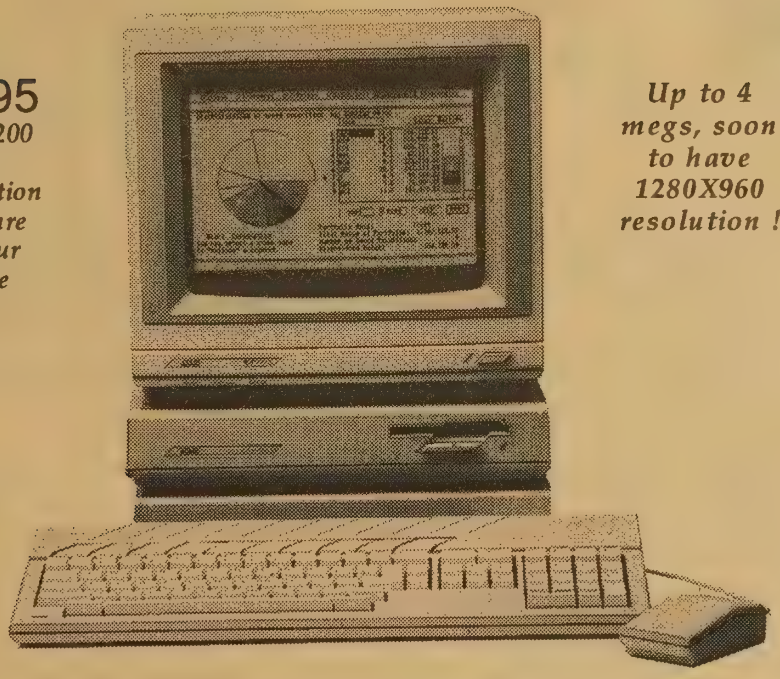

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(3) 20MB Seagate Microscience HH825	225
(4) WD Hard Disk Controller	65
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(6) 40MB ST251 Seagate	385

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(2) 360 KB Teac FD 55Bv	75
(3) 360KB Fujitsu M2251A	68

Miscellaneous

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Logimouse c7	65
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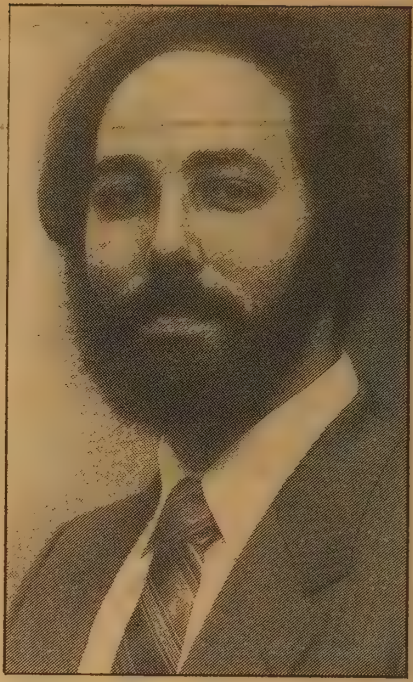
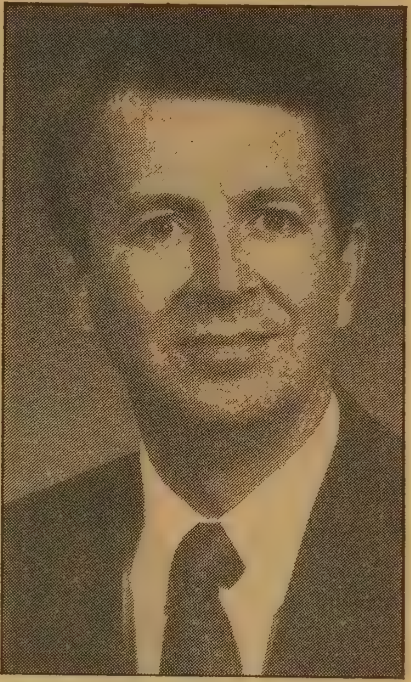
tained its leadership position in the desktop publishing arena, releasing the best-selling *PageMaker* in an improved Macintosh version and a version for the IBM-PC, as well as several ancillary products to assist users with DTP techniques. Its president, Paul Brainerd, who coined the term desktop publishing, continued to demonstrate outstanding leadership in steering the company in ways that drove continuing growth of a substantial new market.





ROD CANION

Compaq
President and CEO

This time last year, it was a matter of speculation whether Compaq had made a brilliant move or committed a serious blunder in releasing its 80386-based computer without waiting for IBM to announce its own 386 and define a standard.

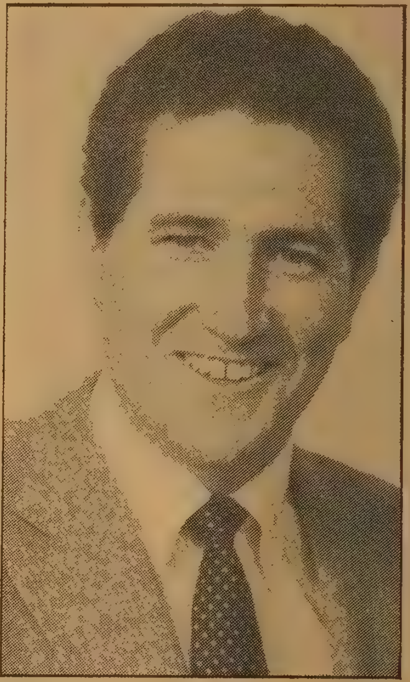
As things have turned out, IBM eventually announced something completely different, a highly-proprietary line of Personal System/2 machines that encompassed a line of machines ranging from 8-bit 8086s to 32-bit 80386s. While third-party vendors tried to figure out how to clone PS/2 technology and design PS/2 peripherals, Compaq defined a new standard with its 386 technology, culminating in its adoption of *Windows/386* as its operating system of choice.

Compaq's prosperity this year seems to bear out the notion that releasing its 386 early was a brilliant notion, as does the growth that 386 machines in general have spurred in the industry as a whole.

NEIL COLVIN

Phoenix Technologies
Chairman and CEO

Ever since the advent of the IBM PC, Phoenix's BIOS code for Intel chips have constituted an industry standard. This year, Phoenix maintained its position of leadership with its BIOS for the 80386 CPU and the 80387 coprocessor, as machines based on these new chips and their vastly improved capabilities caused a burst of innovation and prosperity for both hardware and software vendors, and brought new tools to power-users worldwide.



BRIAN DOUGHERTY

Berkeley Softworks
Founder and CEO

Brian Dougherty's ceaseless quest to bring immortality to the Commodore 64 reached new heights this year with a GEOS-based desktop publishing package for the 64. His company, Berkeley Softworks, publishes the revolutionary GEOS windowing operating system for the 64, as well as a host of GEOS-based applications.

For having the vision and persistence to extend the perennial 64's capabilities — and its users' productivity — far beyond anything its designers could have expected, *MicroTimes* salutes Dougherty and his company.

PHILIPPE KAHN

Borland International
President and CEO

Possibly the most visible man in the computer biz, Kahn continues to

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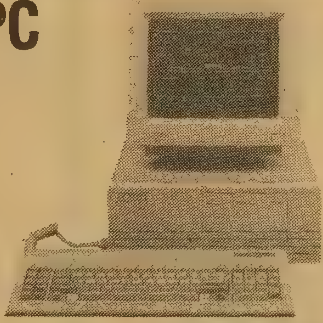

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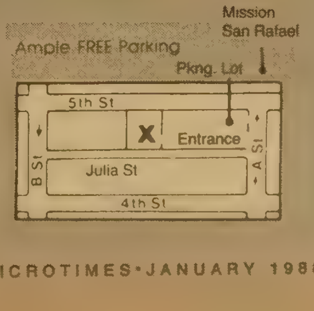

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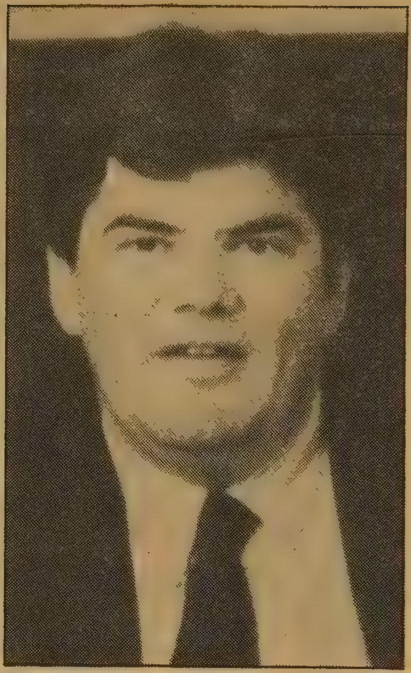
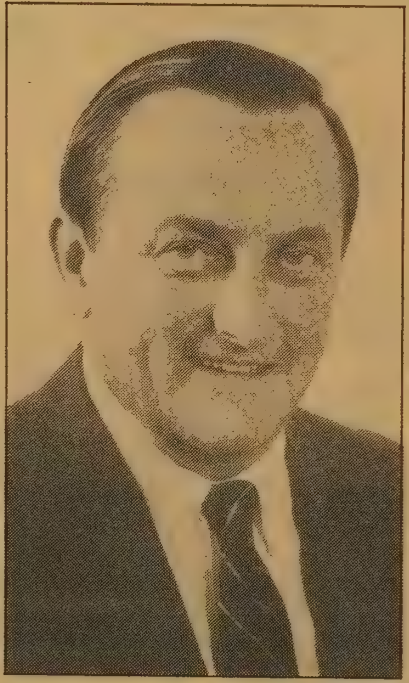


guide Borland to new frontiers. This year, for instance, his company began to address the Macintosh marketplace as well as its traditional PC-based clientele.

Most significant, however, Borland made a dramatic entry into the world of corporate business by acquiring Ansa Software and its highly-regarded database *Paradox*. Plans have been announced to release versions for several new operating systems — with identical user interfaces to minimize training costs for clients.

At nearly the same time, Borland also announced *Quattro*, a state-of-the-art spreadsheet package with speed, power, ease of use, and user interfaces that can be customized to the individual user's preference. Quattro, as Kahn points out, is what comes after 1-2-3. And Kahn promises that Borland will be able to do business with the Fortune 500 without themselves turning into corporate expletive-deleteds.



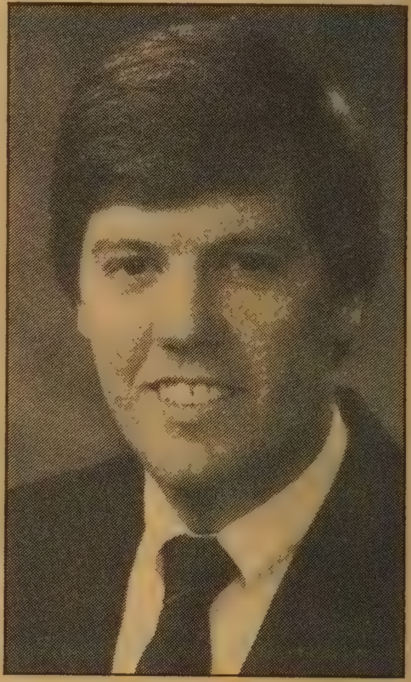
WILLIAM LOWE

IBM

IBM Vice President, President Entry Level Systems

Under Lowe's leadership, IBM's Entry Level Systems Division made a number of aggressive moves to consolidate its position in the corporate market and break into new areas. It launched the revolutionary (especially by Big Blue's customary standards of conservative excellence) PS/2 line, which covered a range of 8- to 32-bit Intel-based machines. (With highly un-IBMish candor, Lowe pointed out at the product unveiling that the 386-based Model 80 offered the power of one of IBM's mainframes at a fraction of the cost.) The new machines all sport a vastly improved graphical interface, sophisticated connectivity with other IBM systems, and a considerable amount of proprietary technology that IBM hopes will deter the clone vendors who eroded the IBM PC's market share in the past. So far IBM's reporting brisk sales.

The PS/2 announcement was later followed by the announcement of yet another model, Model 25, a low-end machine designed especially for the educational market. With the Model 25 and educational packages like the critically acclaimed *Writing To Read* series, IBM is launching an aggressive challenge to Apple in the area of Apple's greatest historic strength.



SCOTT MCNEALY

Sun Microsystems

Chairman of the Board, President, CEO

Since its beginning in 1982, Sun has never failed to show phenomenal growth. In fiscal 1987 it reported earnings of $537 million, $327 million more than last year; it also spent $70 million of that on research and development.

Sun, which makes UNIX-based high-performance workstations, has historically advocated open architecture and adherence to industry standards as a platform for development. This year, under McNealy's leadership, the company made its first overtures to the microcomputer world, acquiring Berkeley-based Centram Systems West and its TOPS networking technology, which al-

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lows transparent access between DOS, Macintosh, and UNIX computers, as part of its connectivity strategy. This year Sun also dropped the price on its 3/50 80286-based workstation to $4995, thereby positioning it as an attractive alternative to the Compaq 386 and the Mac II in the workstation marketplace.

THERESA MYERS

Quarterdeck
President

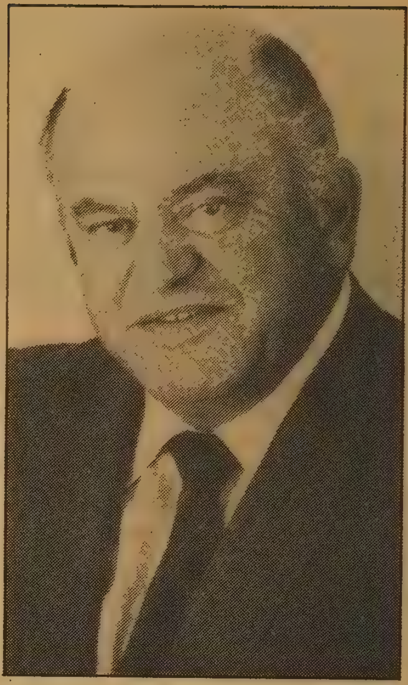
When Microsoft *Windows* was winning acclaim as perennial vaporware, Quarterdeck released a windowing environment for the PC called *DESQview*. It allowed multitasking with existing software running in its native state, each application in its own window. Since then Quarterdeck's continued to enhance and refine its product to support the improved capabilities of the 386 while not leaving users of older, less powerful PCs in the dust.

In the opinion of its many extremely loyal users, Quarterdeck's maintained an impressive track record for delivering functional product while Microsoft talked. Now that *Windows* is available, many loyal *DESQview* users would rather fight than switch. We salute Myers and Quarterdeck for continued product excellence and support of the user community.

JACK TRAMIEL

Atari
CEO

Analysts are scratching their heads over Jack Tramiel's acquisition of the Federated consumer electronics retail chain, a move which may provide Atari with an unprecedented-in-the-US channel for marketing its computers to mass-market customers and may turn out to be something entirely different. Though it's hard to assess the ultimate impact of this move, its scale alone insures that it will have industry-wide ramifications. The Federated acquisition served as just another reminder that although Tramiel has turned over the company presidency and its daily operations to his son Sam, he remains actively involved and a strong influence on its future development.



This year Atari also announced its own PC clone, about which little has been heard since, its Mega computers, more powerful versions of its popular ST line aimed at the business user, and a 10-MIPS machine, the Abaq computer, which uses either the ST or the Mega as a front end for a high-powered workstation. Meanwhile, the ST line continued to attract a growing user base and a respectable complement of software and add-ons.

Betting against Tramiel has usually been a losing proposition, so we watch these developments with interest, even though the exact nature of their impact is yet to be determined.

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Interface Group
Chairman of the Board

Since Adelson's Interface Group acquired the Computer Faire, the show has shown a marked return to its roots as a user-oriented show. Under Adelson's direction, the Faire is the biggest and arguably the user-friendliest of the shows, making a concerted effort to offer a wide spectrum of conferences and seminars and an exhibitor list that runs the gamut from mega-corporations to user groups.

VICTOR ALHADEFF

Egghead Software
President

When Alhadeff started the Egghead Discount Software, he broke with traditional software retailing practice and faced opposition from some vendors who feared loss of prestige for their products. Nowadays a successful string of Egghead outlets are living proof that discount prices and excellent support and service don't need to be mutually exclusive.

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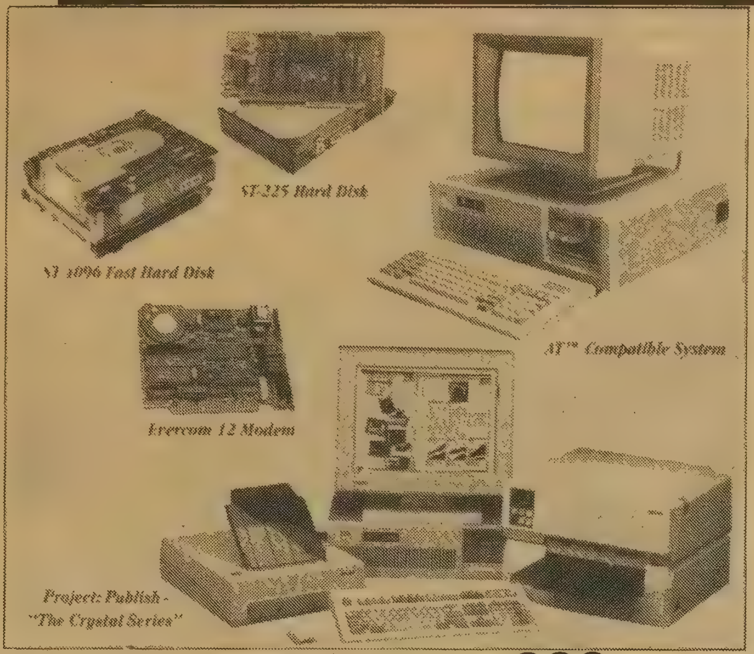

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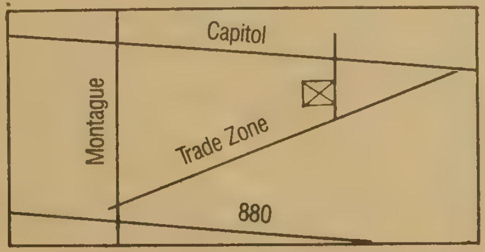

ALAN ASHTON

Word Perfect
President

WordPerfect has long been a popular word processor in the IBM world. This year WordPerfect broadened its horizons considerably, bringing versions of its successful product to software-starved machines like the ST and Amiga as well as to the Macintosh.

LEO BERENGUEL

Peripheral Land
President

A pioneer in the area of SCSI-based storage devices for the Macintosh, Berenguel has guided Peripheral Land to its current success. This year Peripheral Land offered both high-capacity hard disk/tape backup systems and a revolutionary high-density floppy storage device, keeping up with the growing storage and power requirements of Mac users.

MIKE BOICH

Radius
President

With a variety of products from accelerator boards to full-page display monitors, Radius has remained at the leading edge of Macintosh technology.

ALAN M. BOYD

Owl Software
President

Owl's *Guide* hypertext application served as the basis of the context-sensitive help system in *PageMaker* and the platform for a sophisticated auto-repair tutorial for Ford. Boyd's sense of betrayal over Apple's decision to bundle *HyperCard*, and his subsequent decision to move Guide from the Macintosh world to the PC world, are expected to have the effect of bringing hypermedia applications to the Intel world sooner than anyone really expected.

DAVID BUNNELL

PCW
Chairman PCW Communications

Founder of many ground-breaking computer publications, Bunnell unveiled two more this year: *Windows*, scheduled to start publication next year and support the 386-based graphical workstation market, and *Macintosh Today*, for corporate power-users of Macintosh. He's also continued to speak out on issues that concern him, and never lost sight of the fact that the microcomputer industry is part of a larger society.

GORDON CAMPBELL

Chips and Technologies
President

Although it's still under development, Chips and Technologies' announced PS/2 clone chip set is attracting industry-wide attention. Not only will it serve as an early test of the clone-ability of PS/2 and the performance of the clones, it will undoubtedly have much to do with determining the legal viability of PS/2 clones under the legal might and intense scrutiny of IBM.

MARC CANTER

President
MacroMind

Notably with its latest release, *VideoWorks*, MacroMind continued to bring better tools and and a fair amount of entertainment to the Macintosh user. We await future developments with interest.

DOUGLAS CARLSTON

President and CEO

GARY CARLSTON

Chairman of the Board

CATHY CARLSTON

VP Educational Marketing
Brøderbund Software

For their close personal involvement in their company's development of excellent educational and entertainment software; for its expansion into the business world with a ground-breaking product *ForComment*; for its extensive support of Computer Learning Month, and also for the hordes of saucer-eyed schoolchildren entranced with the quest for the elusive Carmen Sandiego, we salute the Carlstons.

FRANK CAULFIELD

Kleiner Perkins Caulfield & Byers
Venture Capitalist

Caulfield, along with Lotus and Vinod Kholsa, the cofounder of Sun Microsystems, is funding what's arguably the startup of the year. G.O. Corporation brings together Lotus founder Mitch Kapor, Former Ashton-Tate chief scientist Robert Carr, and erstwhile Lotus principal technologist Jerrold Kaplan in a closely-guarded enterprise that transcends conventional applications and ventures into the world of artificial intelligence. We await developments with interest.

DENNIS CHANG

Jasmine
President

Finding the window on the PC-clone marketplace slamming shut, Chang changed his fledgling company's direction to Macintosh SCSI devices early last year. His company's low overhead and market-driven product designs have brought Jasmine massive growth and considerable industry prestige in its relatively short life.

DEBORAH COLEMAN

Apple Computer
Chief Financial Officer

Praised by her boss John Sculley and featured on the cover of *Ms.* Magazine, Coleman rose to her current position after successfully optimizing operations in Apple's production facilities. Combining a sense of Apple's vision with a practical sense of business realities, she hopes someday to be the CEO of General Electric.

CHRIS CRAWFORD

Programmer

Balance of Power's author continues to steer his own occasionally-controversial course, rejecting alien-zapping and hack-slash games in favor of those that stress strategy and personal and political interdependency. His latest, *Trust And Betrayal, The Legacy of Siboot*, combines qualities of D&D adventure with psychological subtlety.

CLIFF CUMMINGS

Telenet, PC Pursuit
Product Manager

Cummings had the inspired notion of using Telenet's packet-switched telecommunications lines, a mainstay of business by day and idle by night, for low-cost off-peak telecommunications by individuals. The result — PC Pursuit, all the off-peak modeming you can use for a flat $25 a month.

ORGANIZATIONS

In addition to nominations of distinguished individuals, we received suggestions concerning organizations whose contributions to the industry were significant and not attributable to a single individual. Among these outstanding groups:

BERKELEY MACINTOSH USER GROUP or BMUG moved to a brand new office building in downtown Berkeley attesting not only to its popularity but also its financial success. Its prosperity has extended to its successful offshoot company Farrallon Computing, which markets a low-cost LAN originally known as BMUG-net. With thousands of members and huge weekly gatherings that rival old time revival meetings for their aura of good feeling and general enthusiasm, BMUG is what every user group dreams of becoming.

THE SOFTWARE ENTREPRENEUR'S FORUM was founded in 1983 to provide software entrepreneurs with the resources needed to compete with larger more established companies. Monthly meetings and special interest groups accompanied by one day seminars give the small software business person the chance to learn from the more experienced people in the industry.

Based in Palo Alto, SEF has brought to its members the advice and wisdom of such people as Phillipe Kahn, Jean-Louis Gassee, Andy Hertzfeld and George Morrow. Its successful alumni include Michael Lunsford, founder of MacroPac International and Bill Ray, founder of Apian Software.

SEF recognizes that it takes more than good programming skills to make it in the highly competitive software marketplace and therefore does its best to pass on the vital marketing and business knowledge necessary to run a successful software company. SEF not only benefits the programmer starting out in business but also the entire industry.

COMPUTER LEARNING MONTH

This October saw the coming together of all segments of the microcomputer industry to promote an investment in the future. Computer Learning Month was a great success by all standards. Efforts were made by both Apple and IBM, software manufacturers and the computer press along with teachers, parents and children all across the country to focus attention on the computer in the classroom. Seminars were held, speeches made and articles written in order to better understand the role of the computer in the educational process. The efforts went beyond enlightened self-interest to actual concern and pride in opening up possibilities for today's children.

THE WHOLE EARTH 'LECTRONIC LINK (THE WELL), its management and its users. The woods are full of conferencing systems competing for the modemer's dollar. We've found that we can't get along without this one — many of our stories are suggested and written by WELL users, we maintain a conference on the system for reader feedback, and we find in-depth discussion on every conceivable industry-related subject.

All that aside, the WELL is fun. At any hour of day or night, you can find a conversation among some of the most interesting people in the Bay Area (and elsewhere) on a subject of interest to you, whether it's science fiction, spirituality, parenting, programming, or the Grateful Dead. As somebody once said in another context entirely, it's part of a lot of interesting lives.

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FRED DAVIS

A+ Magazine
Editor in Chief

A+ has been a valued resource for Apple users for years. Under Davis' direction, it provides reliable product information and trustworthy advice for its readers.

MICHAEL DELL

PCs Limited/Dell Computer
CEO and Chairman of the Board

Having already enjoyed overwhelming success with his line of PC, XT, and AT clones, Dell lost little time in moving into the 386 arena this year. His company continues to prosper, providing low-cost power to thousands of users.

JOHN DVORAK

Columnist

Irreverent, sometimes irascible, Dvorak continues to annoy the purveyors of substandard products, poke fun at sacred cows, and endear himself to thousands of readers who appreciate his candid advice and off-the-wall humor.

STEVE EDELMAN

SuperMac
VP of Advanced Product Development

With products ranging from storage devices to memory enhancements to dazzling color monitors for the Mac II, SuperMac remains one of the leading vendors of Macintosh enhancement products. Under founder Edelman's leadership, the company continues to expand and innovate.

MARTIN ENGEL

Apple
Project Manager For ACOT

With Engel's direction, the Apple Classroom of Tomorrow program has proved a practical way to demonstrate the impact of strategically-used computers in an educational setting. The two-year-old program reflects not only improved test scores and behavior patterns among its students, but also has demonstrated that when students have access to the same tools, ethnic, gender and socio-economic differences have no bearing on performance.

ED ESBER

Ashton-Tate
Chairman of the Board

Esber is steering the company through difficult times as it expands into the Macintosh market and tries to maintain its position as an industry leader. This has been a turbulent year for Ashton-Tate. On the plus side, *dBASE Mac* finally shipped. Yet to be determined is the long-range impact of several significant lawsuits, current and potential, in which the company is fighting for what it considers proprietary technology, most noticeably with Migent.

GORDON EUBANKS

Symantec
President, CEO

Under Eubanks' aegis, Symantec, previously best known for its *Q&A* database, has embarked on a veritable flurry of acquisitions and positioned itself as a major software vendor in the industry, with an eye to connectivity between working environments. Currently among Symantec's holding: Living Videotext, Turner Hall Publishing, Breakthrough Software and Think Technologies.

TIM FARRIS

Boca Research
President

Since founding Boca Research in 1985, Farris has been providing high quality add on boards at a low price. His innovations include the first standardized EGA board and the first memory board that was able to operate at CPU speeds as high as 24 MHz.

MARK FLANAGAN

General Computer
VP Marketing, Sales, and Service

General Computer won early fame as the vendor of HyperDrive, one of the first hard disks for the Mac. Today Flanagan's company continues to provide power and innovation for the Mac marketplace with everything from drives to laser printers.

DAVID, JOHN, AND RANDY FRY

Founders

KATHRYN KOLDER

Fry's
Director of Computer Operations

Fry's Electronics has become one of the most popular stops for tourists in Silicon Valley — a supermarket for the computer shopper. *MicroTimes* commends the Fry Brothers and Ms. Kolder for making an innovative marketing concept a successful business.

JEAN-LOUIS GASSEE

Apple Computer
Senior Vice President of Research and Development

Something of a Renaissance man of the computer world, Gassee heads one of the most innovative R&D departments in the industry, while continuing to be one of Apple's most engaging spokesmen. His book, *The Third Apple*, is an entrancing, compelling account of some of the possibilities he sees looming on our culture's horizons as a result of the Apple that came after Eve's and Newton's.

CHARLES GESCHKE

Adobe
Executive VP

Thanks to the leadership of its founders, Adobe has continued to grow, prosper, and innovate. This year it

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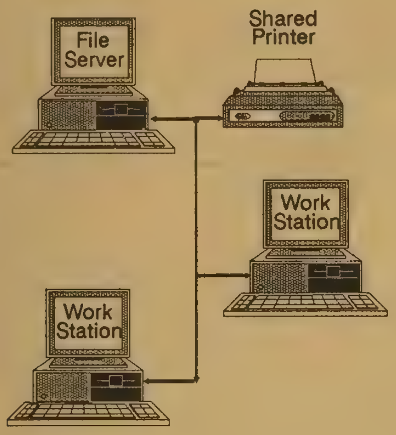

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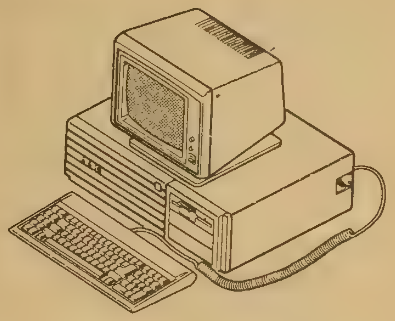

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ON THE HORIZON

Those in the know always keep a lookout on the horizon to make sure they're not caught off-guard in the never-ending market wars that characterize the micro computer industry. Here are several people *MicroTimes* feels you should keep an eye on.

MAX TOY, *President of Commodore Business Machines.*

Max Toy is a recent arrival at Commodore, having been lured from XTRA, ne ITT Information Systems. At XTRA he was responsible for greatly enhancing the efficiency and responsiveness of the company's marketing channel and producing impressive increases in sales, and it's hoped that he will produce similar wizardry at Commodore, a company that's always made good machines and never quite acquired the right touch in marketing them.

STEPHEN BECK, *Beck-Tech.*

Stephen Beck has long been a familiar face in the area of computer animation and as a pioneer of desktop video. One of his best feats was getting a Macintosh to produce color animation long before the Mac II came into existence. Beck says that in the next few years we'll see actual editing of videotape on a Mac, thereby drastically reducing equipment costs, possibly doing for video what MIDI did for music.

PHIL SIH and JOHN LITTLE, *Portal Communications Company.*

When Phil Sih and John Little decided to create The Portal System, an online communications service, they decided to get it right the first time. Using an expandable modular construction, offering high speed at a low price and a transparent gateway to over 5,000 computer sites on four continents they have created somthing more than just a conferencing system, bulletin board or e-mail service. In their words its an "electronic reflection" of the community. Soon to arrive — a version of Ted Nelson's Xanadu hypertext system online for Portal users.

STEVE WOZNIAK, *CL9.*

It's easy to see that "The Woz" is enjoying life. He's making speaking engagements, organizing rock concerts in Moscow and even appearing as a guest disk jockey. While his newest toy the "Control everything" remote control, may not be shaking any foundations, his influence on the hearts and minds of young computer enthusiasts is great. A mind as creative as this is never idle and bound to soon produce something we'll all gaze at in wonder.

---

attained a strong presence, diversifying from a company chiefly engaged in selling PostScript code to printer OEMs and finding a warm reception for its software from fonts to the revolutionary *Adobe Illustrator.*

RICK GIBSON

The Consortium, Inc.
President

In The Consortium, Gibson created a powerful, effective alliance of third-party vendors of products supporting *Lotus 1-2-3.* Not to rest on his laurels, he's recently announced a new version, one oriented around *dBASE.*

NAT GOLDHABER

Centram Systems West
President

Impelled by the vision of "connecting everything to everything else," Goldhaber and Centram developed the revolutionary TOPS network system, allowing transparent access among UNIX, DOS and Macintosh machines on distributed networks. The concept and the product were sufficiently impressive that Centram found itself besieged with suitors and was acquired by Sun Microsystems.

CARL GRITZMAKER

Migent
CEO, President

Time will tell the victor in the ongoing litigation between Ashton-Tate and Migent, which consists of a great number of A-T alumni, over who owns what code. Meanwhile, Gritzmaker's company enjoys respectable prosperity selling business software and Pocket Modems, while its long-promised revolutionary database, code-named *Emerald Bay,* waits in the wings.

SIG HARTMAN

Atari
VP of Software

Hartman's in charge of inducing software vendors to create products

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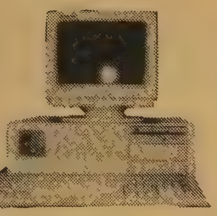

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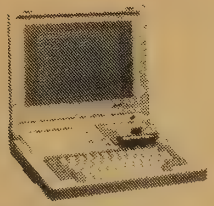

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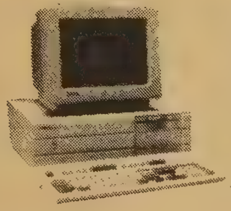

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COMPUTOWN

for Atari computers. This year saw his efforts coming to fruition in a new crop of software for the ST, allowing the machine to become a more serious contender in the business as well as the consumer/entertainment world.

TRIP HAWKINS

Electronic Arts
President

Once again, Hawkins led his company through a year of outstanding software releases — an improved version of *Deluxe Paint* for the Amiga and a version of the same package for the IIGS among them. EA also delighted hordes of PC users with the release of the DOS version of *The Bard's Tale*. Even though, in a momentary lapse of taste, the company also saw fit to release *Leisure Suit Larry In The Land Of The Lounge Lizards*, we still think Hawkins' achievements merit recognition.

ANDY HERTZFELD

Programmer

Andy Hertzfeld is one of the original Macintosh wizards, and influences the industry's expansion into new frontiers by continuing to explore and innovate. *Servant*, his alternative Mac environment, attained wide distribution this year, and has attracted many devoted users.

STEVE HUIE

Everex
President

Huie's led Everex to a prominent stature as a leading OEM of IBM-clone technology. From PC to 386, Everex offers vendors quality engineering and impressive performance, and is beginning to move into the PS/2 arena, thereby helping to create a thriving marketplace in the Intel-based arena.

DAVE HUGHES

Chariot Conferencing

One of the pioneers of electronic democracy, Hughes is relentlessly dedicated to heralding the Information Age as a proper setting for computer-based populism. If the gap widens between the information-rich and the information-poor, it won't be his fault.

KAZUO ISHIGURO

Toshiba
President of the Industrial Electronics Business Sector of Toshiba America

Given the task of turning Toshiba America into a prosperous American company, Ishiguro was well on his way when he encountered an unexpected road hazard — the Toshiba Machine scandal and subsequent trade sanctions which made it impossible to sell some of the company's most popular laptop computers in the US. Nonetheless, Toshiba's made a remarkable recovery, introducing the high-end 3100 and the 8-bit T1000 laptops to rave reviews and brisk sales.

BILL JOY

Sun Microsystems
VP of Research and Development

A renowned UNIX guru and author of the *vi* text editor, Joy leads Sun in the development of "real computers based on microprocessors." His vision of open architecture, industry standards and cooperation with outside vendors has led Sun to technical excellence and prosperity.

MITCH KAPOR

G.O. Corporation
Member of the Board of Directors

We await Kapor's activities at G.O. with interest, but that's not why he's on this year's list. Nor is he on this year's list because he's a co-founder of Lotus. No, he's on the list because, as Philippe Kahn reports, he felt personally responsible for his product *1-2-3* and didn't want to be a party to Lotus' look-and-feel lawsuits, and we think this is a commendable attitude.

GUY KAWASAKI

Acius
President

It's not every software company president who views every difficulty a user has with his product as his own personal problem, but that's how it is with Kawasaki — one user reports getting a phone call from Kawasaki, vacationing in Hawaii, trying to deal with a bug he'd reported. If Acius' *4th Dimension* doesn't become the database of choice in the Macintosh world, it won't be because Apple's ex-software evangelist didn't try hard enough.

DAVID KAY

Kaypro
President

Not long ago, it was questionable that Kaypro would survive the transition from the CP/M to the DOS world. The deathwatch was called off long ago, and Kay's company is doing very nicely, thank you, with sophisticated 286- and 386-based desktop machines and an innovative laptop or two. Expect Kaypro to be a key player into the indefinite future.

The Annual Steve Jobs "What's NeXT?" Award

This year's Annual Steve Jobs "What's NeXT?" Award has been awarded once again to the all time master: Steve Jobs. It's like the old gag where the mad professor goes into his lab and all you see is smoke, dust and an occasional explosion. But you know he's soon going to emerge, covered in grime and with his hair all messed up, holding *something*. *Someday*.

We strongly suspect that the NeXT workstation is going to amaze and revolutionize the industry when it arrives. Jobs himelf has yet to emerge from the lab, but like his Apple co-founder, Wozniak, you know he *will* emerge. We just hope he's forgotten our joke by then.

L. WILLIAM KRAUSE

3COM
Chairman and CEO

As networking became an even more vital issue this year, Krause's company continued to develop more sophisticated technology and effective solutions for the corporate world, and to expand its range of supported systems.

NED LAUTENBACH

IBM
IBM Vice President, President, National Distribution Division

Lautenbach is generally credited with revitalizing IBM's trouble-ridden dealer channel, streamlining operations, clarifying policies and greatly improving morale in the process.

JAN LEWIS

Columnist

Lewis brings an unconventional perspective to the industry that's both striking and insightful. Her syndicated column, But Jan Lewis Says..., offers readers nationwide a fresh viewpoint on computer-related issues.

DAVID LOESE

Ziff-Davis
Group Publisher

Presiding over PC, *MacUser* and *A+*, Loese brings responsible journalism and helpful articles to users of a variety of machines, and exerts considerable influence on the course of the industry's development.

WILLIAM LOUDEN

General Electric, GEnie
General Manager of GEnie

Louden's brainchild GEnie is one of the nation's most popular online networks and conferencing systems, offering information and discussion on a wide range of topics. As both an information resource and a social environment, GEnie's one of the successful pioneers of the medium.

GILMAN LOUIE

Nexa
CEO

Founded a few years ago by Louie and his college buddies, Nexa's acquired an excellent reputation as a software development house. Now that Nexa's been acquired by International software publisher Sphere, expect Louie to continue to guide his company into new markets from games to business.

MARSHALL MAGEE

Magee Enterprises
President

Some years back, Magee wrote a shareware program called *Automenu* to simplify the DOS interface for the bewildered user. He figured it might put him through college. These days, *Automenu* is still shareware and a phenomenally successful program, with a variety of marketing approaches, including sales by the thousand to government agencies.

BILL MACHRONE

PC
Publisher

One of the most-read magazines in the industry, Machrone's publication offers in-depth practical information to the business user. This year it continued to earn the respect of its readers with its coverage of 386 technology, windowing environments, and other innovations in the PC industry.

NEXT YEAR'S STORY?

TOM LEONARD, *President, TML Systems.* There are a lot of talented people who are influential in this industry that aren't famous. Tom Leonard is one of them. He represents the classic microcomputer Cinderella story.

He also represents all those lone ballots we received from loyal employees nominating their bosses. Leonard himself was nominated by his brother and marketing vice president Bob Leonard.

A few years ago Tom Leonard held a high-paying job at Harris Corp. in Florida, where he was working on an ADA compiler for the Air Force. Then Dan Cochren, product manager at Apple, told him about the soon-to-be released Macintosh. Leonard quit his job, borrowed money from friends and ran his business out of his apartment for six months. On his own he developed, introduced and marketed the first Pascal programming language for the Macintosh, a year before Borland and Lightspeed.

His successful company, TML Systems, is now developing both Pascal and BASIC programming products for the Mac II and SE toolbox routines.

Tom Leonard's willingness to forsake the security blanket of a large corporation and put everything on the line for something he believed in is an excellent example of the energy and daring that drives the microcomputer industry.

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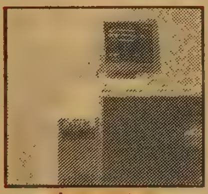

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W.D. dual hard disk/ floppy disk drive
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Enhanced function workstation keyboard
Clock-calendar with battery backup
Technical reference manual

TransLAN

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Workstation style keyboard

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Includes two CSMA/CD LAN cards, network software, training manual, intro to LAN workshop.

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Complete manual w/ intro-CAD training

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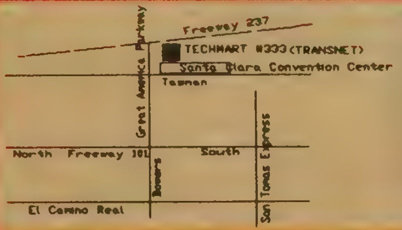

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TOM MAREMAA

Infinity Software
President

Maremaa has led his company in the development and publication of several innovative software packages for the Macintosh and the Amiga. Perhaps most notable — *Shakespeare*, a full-color package for desktop publishing on the Amiga.

DUANE MAXWELL

Levco
Hardware Engineer

Not content to rest on its laurels, Levco once again brought out a host of products for the Mac, notably the Prodigy SE board for those who want 68020 processing power in their SEs. Maxwell's already talking about a multi-hundred MIPS board for the Mac II — power users stay tuned.

LARRY MICHELS

SCO
President

Having seen the potential of the UNIX multi-user operating system in the business world, Michels founded the Santa Cruz Operation to market systems and applications based on Microsoft's XENIX. The advent of more powerful processors like the 80386 has suddenly rendered XENIX and SCO's application a compellingly attractive option for the business office.

PATRICK MCGOVERN

IDG Communications
Chairman and CEO

McGovern's company publishes some of the industry's most highly-regarded magazines (*Infoworld*, *PC World*, etc.) This year they struck a blow for computer *glasnost* by announcing the impending publication of a Moscow-based version of *PC World*.

BROCK MEEKS

Columnist, BIX Moderator

We think Brock Meeks deserves public acclaim for his tireless efforts to spread the word about the FCC's plans to increase access charges for packet-switched networks. Currently deluged with mail from irate modemers, the FCC is attempting to assess public sentiment; if, in years to come, long-distance telecommunication remains within your budget, thank Brock and the many others who raised their voices in journals and online systems across the country.

JOHN MEYER

Ventura Software
President

Last year everybody suspected that Meyer's brainchild *Ventura Publisher* was a revolutionary product. This year, it's lived up to its promise, and despite the release of a version of *PageMaker* for the PC, is probably the state-of-the-art desktop publishing product for that market.

FRED MICHAEL

Zenith Data Systems
Director Market Development and Education

Zenith's enjoyed success this year on many fronts, and launched some innovative products including an impressive flat-panel display monitor. It's also staged some notable marketing coups, including beating out Toshiba and other vendors for a number of lucrative government contracts for lap- and desktop machines.

GWEN MOORE

California State Representative

Assemblywoman Moore is to be commended for her efforts to bring the law up-to-date in computer related matters. She proposed a bill last year to extend the privacy provisions of the state constitution to computer-based communications; although the bill was defeated, she's already introduced a new version this year. She was also instrumental in the formation of The Capitol Connection, a bulletin board specifically designed to facilitate online communication between legislators and their constituents.

TED NELSON

Project Xanadu

Back around 1960, Ted Nelson developed the concepts of hypertext and hypermedia, in the fond assumption that the technology to support his vision would be along in about 1962. Well, it's 1987, the technology's finally caught up, Xanadu's running on a Sun, and Ted Nelson's getting some respect.

RAYMOND NOORDA

Novell
President

One of the industry leaders in connecting computers from the largest to the smallest to create effective work environments, Novell continued to innovate and expand its support of various hardware and software systems. As networking continues to be a crucial concept in the industry's evolution, expect Noorda to keep Novell in the vanguard.

ADAM OSBORNE

Paperback Software International
President and CEO

Osborne continues to develop and market low-cost, high-performance software that builds on a platform of existing standards, adds features and utilizes industry-standard interfaces — notably one similar to that of *1-2-3* in *VP-Planner*. While the outcome of Lotus' look-and-feel lawsuit against PSI remains to be seen, we tend to agree with Osborne's insistence that standards are necessary for the healthy development of the industry.

GLENN PATCH

MacWeek, Patch Communications
Chairman Patch Communications

Patch's company was the first to recognize the expanding market of Macintosh power users in the business world and to address that market with a weekly tabloid *MacWeek*.

AUBREY PILGRIM

Author

One of the first to demonstrate the joys and economic benefits of building your own clone, Pilgrim published his first book, *Build Your Own IBM Compatible And Save A Bundle*.

RON POSNER

Borland Ansa
Borland: Exec VP of Sales
Ansa: President and CEO

Posner's guided Ansa, publishers of the revolutionary database *Paradox*, to a position of prominence and respect among business users. In the wake of Ansa's acquisition by Borland, he'll be instrumental in expanding the new company's scope and foothold in the corporate world.

TRENDS AND PATTERNS

So you want to be an executive?

Our list this year is chock full of top executives:

- 24 Presidents
- 13 Vice Presidents
- 10 Presidents and CEOs
- 10 Chairmen or Chairmen of the Board
- 4 CEOs
- 3 Chairmen and CEOs
- 1 CFO

But if you're a woman...

One of the biggest issues facing the computer industry is the number of women involved in management. While there has been a proliferation of women in public relations and marketing positions, only a few have cracked the upper bastions of the male-dominated computer industry. This year there are only seven women, on our list which is roughly the same percentage as last year. Theresa Myers, president of Quaterdeck, however, made it into this year's top ten. Deborah Coleman, CFO at Apple was on the cover of *Ms. Magazine* and Gwen Moore is a state representative fighting for computer privacy rights in the California State Legislature. Now that the talents of women are becoming more visible, let's hope the numbers start to even out.

Journalists on the wane?

On last year's list of 50 names there were eleven journalists. On this year's list of 100 names there are only nine. Magazine and book sales are brisk, however. Does this mean we're seeing the end of an era where such high profile journalists as Jerry Pournelle and John Dvorak dominated the scene? Are new faceless journalists replacing the old guard?

Hardware or software?

Those involved in the manufacturing of hardware only slightly outnumbered those involved in software: 35 to 33. Sometimes, however, it was hard to draw the line. Companies like Apple, Migent and IBM produce both. What's obvious is the complete dependency of each on the other, and how some companies are covering their bases by producing both.

Apples or IBMs

In the traditional rivalry between IBM and Apple, our readers seemed to favor Apple, six current Apple employees to IBM's two. However, those involved in providing MS-DOS and IBM or compatible software and hardware by far outnumber those at Apple or those providing Apple software. Again many companies are now producing both Apple and IBM MS-DOS products which seems to be blurring the distinction between the two camps. Apple has also publically made a commitment to provide MS-DOS connectivity.

Do you have to be an executive to make an impact?

Traditionally the beauty of the computer industry is the ability to come from nowhere and suddenly be a star. This is true of many people on the list. It has also been true that one person's efforts can have a far reaching impact even if they don't run a company. Our list includes three writers of popular software, two creators of shareware products, two user group computer society leaders, one rock musician and one visionary whose 20 • -year-old dream of hypermedia is finally being realized.

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Toshiba 321SL/341SL	561/749
Toshiba 351/351C	1049/1199
Epson FX86E/FX286E	374/474
Epson LQ800/LQ1000	440/733
Epson EX800/EX1000	399/579
NEC P6/P7	524/746

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IBM PS/2 Model 25 Color	1272
IBM PS/2 Model 30 2 Drive	1272
IBM PS/2 Model 30 20 MB	1721
IBM PS/2 Model 50 20 MB	2696
Compaq Portable II Model 4	2949
Compaq Portable III Model 20	3749
Compaq Portable III Model 40	4349
Compaq 386/ 40 MB Deskpro	4874
XT Clone 2 Drive, Mono System	745
XT Clone 2 Drive, Color System	875
XT Clone 1 Floppy, 20 MB HD, Mono	1095
XT Clone 1 Floppy, 20 MB HD, Color	1225
AT Clone 1 Floppy, 512K, Mono	1095
Apple IIGS, Color Monitor, 3.5" Drive	1495
Apple IIC Color Bundle	989
Macintosh Plus	1595
Macintosh SE, 2 Floppy System	2099
Macintosh SE, 20 MB	2749
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Toshiba 1000 Laptop	899
Toshiba 3100	3524

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DAN POTE

Applied Engineering
President

If the Apple II really does live forever, one of the first people to thank is Dan Pote, whose company makes boards to enhance the functionality of the venerable II — right down to running IBM software.

JERRY POURNELLE

Columnist

A longtime advocate of the one-person, one-computer principle, Pournelle is often opinionated and controversial. He continues, however, to be a tireless user advocate and debunker of hype.

SAFI QURESHEY

AST
President and Cofounder

ALBERT WONG

AST
Executive VP and Cofounder

THOMAS YUEN

AST
Executive VP and Cofounder

Under the continued leadership of its founders, AST Research expanded its operations still further, particularly in the area of connectivity, with Mac-to-PC, micro-to-mini and micro-to-mainframe products. It also released a complete desktop publishing system with impressive price/performance ratio, aimed at the corporate market.

WAYNE RATLIFF

Migent
Chief Scientist/Consultant

Author of *dBASE II*, vital member of the *dBASE III* design team, Ratliff is the focal point of a precedent-setting suit between Ashton-Tate and Migent over proprietary technology. Meanwhile, he's hard at work on *Emerald Bay*, which Migent believes will usher in a new era of database technology.

JEF RASKIN

Information Appliance
President and CEO

One of the original Macintosh designers, Raskin is ardently committed to the notion of simple user interfaces. This year his ideas found shape in the Canon CAT, a powerful, easy-to-use office machine.

JOHN ROACH

Tandy
President and CEO

In the past year Roach has been remarkably successful in taking Tandy beyond its consumer/hobbyist origins to new stature as a serious player in the world of business computing, complete with an effective direct-sales force, offering a low-cost alternative to Big Blue.

THE YEAR'S WORST

Along with the flood of nominations we received we also accumulated a few votes for the year's worst. For those who are interested here's what a few of our voters had to say.

- **OS/2** "For not appearing." *Eds: Runner up for the Annual Steve Jobs "What's NeXT?" Award.*
- **PS/2** "For appearing in the first place."
- "No doubt, no question: **The Lotus Look And Feel Suit Against Adam Osborne's Paperback Software.**"
- **Leisure Suit Larry In The Land Of The Lounge Lizards**, for striking a new low in latter-day Neanderthal attitudes toward women.
- **Japan-bashing** and protectionist trade policies.
- **The Federal Communications Commission**'s plan to assess additional charges of approximately $5 per hour on users of packet-switched networks.
- A perennial favorite: **Copy protection.**

HEIDI ROIZEN

T/Maker
President

Publishers of WriteNow, a Macintosh word processor praised by Steve Jobs himself, T/Maker has become, under Roizen's leadership, an innovative and varied source of productivity and entertainment software.

BEN ROSEN

Sevin Rosen Management
Venture Capitalist

Rosen and his firm made the Borland acquisition of Ansa possible. The move is expected to bring powerful, innovative software to the business world and give Borland the ability to nip at the heels of Lotus, Ashton-Tate and Microsoft.

JONATHAN ROTENBERG

Boston Computer Society
President

User groups are a powerful source of feedback to developers and vendors, and a crucial factor in the success of a product. Rotenburg continues to keep the nation's largest and most influential user group a force to be reckoned with.

TODD RUNDGREN

Musician

We applaud Rundgren's work with user interfaces. We applaud even more vigorously his activities at computer shows and his own concerts this year, showing largely non-computerist audiences that these machines aren't just powerful, they're *fun*.

EDWIN RUTSCH

SF XT/AT Clone User Group
Cofounder, Honorary President

Rutsch was one of the earliest spokesmen for the benefits of low-cost PC/XT/ATclone ownership. He continues to promote clones and support their users.

DAN SILVA

Electronic Arts
Research Fellow

The author of *Deluxe Paint*, Silva works to bring ever-more-spectacular graphics capabilities to the Amiga and other machines.

VICTORIA SMITH

The Computer Show
Founder

Starting with a small local TV show to bring residents of Silicon Valley news and product information, Smith has broadened the show's scope and distribution so it now reaches audiences nationwide.

BARELY-THERE WARE

As we enter a new year, we eagerly await the arrival of these long-promised, long-unshipped products:

- **OS/2**
- **A/UX** (Apple's UNIX for the Macintosh)
- **FullWrite**, Ann Arbor's full-featured word processor for the Macintosh, expected Real Soon Now.
- **Xanadu**, Ted Nelson & Crew's hypertext implementation, rumored to be coming to a Bay Area online system, also Real Soon Now.

We note with pleasure that **dBASE Mac** is now in the stores and no longer qualifies for this list.

SAM TRAMIEL

Atari
President

While his flamboyant father attracts the headlines, Sam Tramiel keeps Atari running smoothly, consolidating its position as a continuing source of high power and low cost to its customers.

KEN WASCH

Software Publishers Association
Executive Director

Wasch ably guides the SPA as a source of mutual support and impetus for excellence among software developers and publishers, while insuring a healthy climate for continued growth and innovation.

BOB WALLACE

QuickSoft
President

Probably the ultimate shareware success story, *PC-Write*'s author has proved that excellent software and support can be made available without sending either its author or its user to the poorhouse.

JOHN WALKER

AutoDesk
Chairman of the Board

Under Walker's leadership, Autodesk continues to improve and refine its powerful *AutoCAD* software, and to build better solutions for its customers' varied needs by working closely with third party developers.

SCOT WATSON

Red Ryder
Author

While we view with interest Watson's venture into the commercial world with version 10 of *Red Ryder*, we salute him for his years of pioneering work in offering shareware in the Macintosh world. *RR*'s earlier shareware versions are among the most popular telecommunications programs among Mac users.

TOM WHITE

Seybold Seminars
Chairman and CEO

To the busy executive trying to keep up to date with rapidly changing technology, Seybold's seminars and conferences are an invaluable source of training and information.

JOHN WARNOCK

Adobe
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Warnock's led Adobe through a year of prosperity and innovation. Most notably, the company considerably expanded its software, marketing PostScript based fonts and the elegant *Adobe Illustrator* graphics package.

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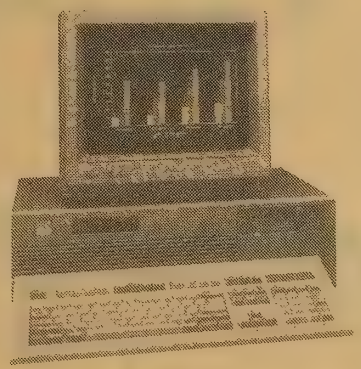

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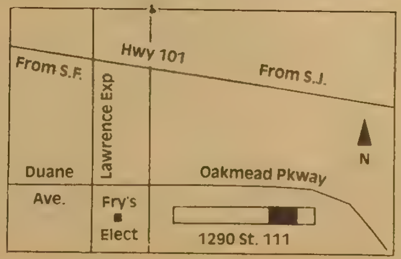

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GEM Desk Top Publisher

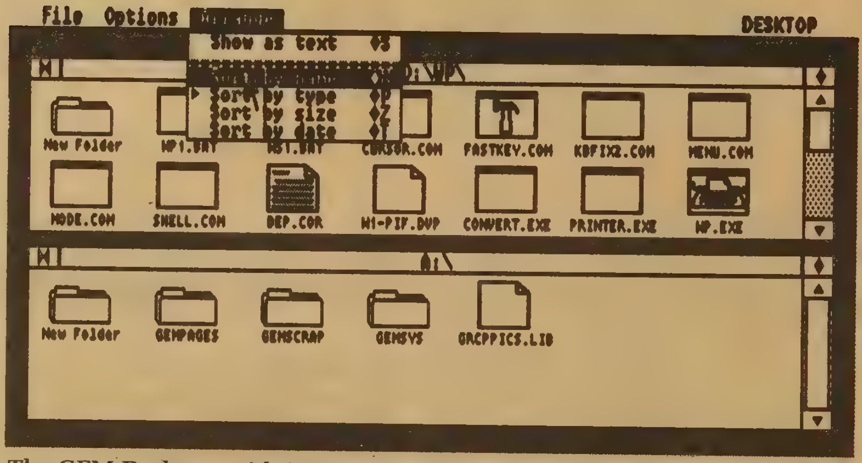
By Lenny Bailes

Long before the phrase Desk Top Publishing was invented, I was an amateur journalist. Not all people in the world who distribute their own written words are corporations with thousands of dollars to spend on equipment, but many are lovers of books and finely produced magazines. In my case, I'd been publishing science fiction fanzines since I was 17 years old, typing mimeograph stencils, cutting and pasting, electrostencilling, and occasionally pasting up copy for photo offset reduction.

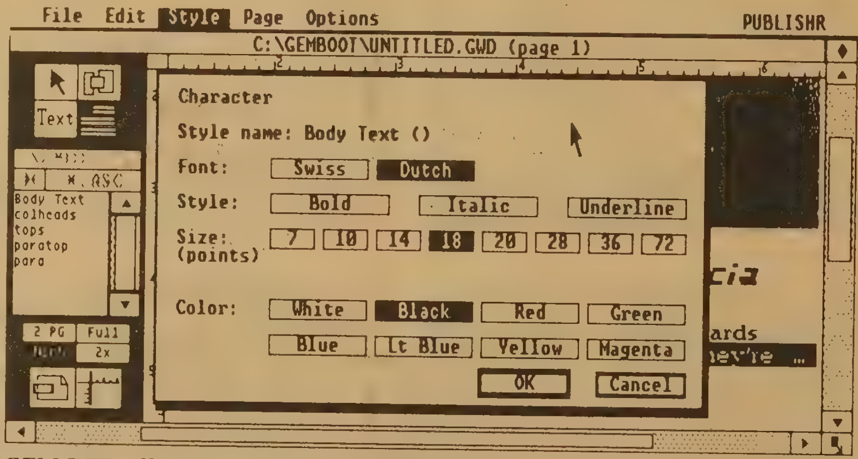
Like many others, I was introduced to personal computing by the desire for a word processor, and was told that for this an IBM machine would work fine, but if I had any plans to get arty a Macintosh was required. I would occasionally see a Mac with its screen lit up at a party or swapmeet, tentatively move the mouse around a little bit and click — but for me *using a computer* meant typing in disem-voweled acronyms at the A› prompt, as it still does for most MS-DOS users.

I was a bit scornful of the Apple Desktop metaphor because I knew I had complete control of my machine. I didn't have to look at white-gloved fingers telling me to please stand by while the computer did something unknowable. I didn't have to wade through an endless series of menus disguised to look like index cards. I could make my computer execute any list of tasks I wanted to in any order with a one keystroke batch file.

My exposure to GEM software changed my attitude about all this. The *Desktop* is a stand-alone DOS shell, which could compete with *XTree* or *1dir*, even if there were no other GEM programs to go with it. Rapid transferring of files between subdirectories, manipulation of two drives on a single screen, plus pop-up print spooler, calculator and clock — all can be accessed by pointing and clicking the mouse (or if you prefer, by two-stroke keyboard combinations). The Mac-like iconographic display can be replaced by an *MS Windows* style text display, but it runs 100% faster than *MS-Windows* does on an 8088 machine.



The GEM Desktop, with its Macintosh-like pull-down menus.



Character

Style name: Body Text ()

Font: Swiss [✓ Dutch]

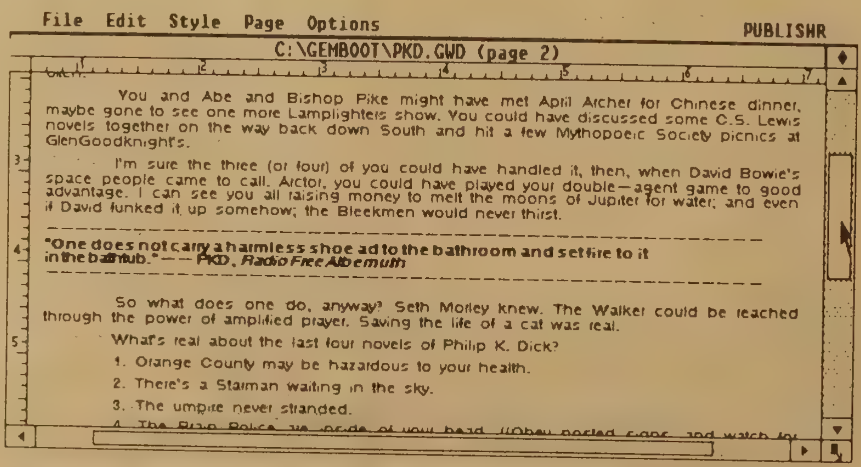
Style: Bold Italic Underline

Size: (points) 7 10 14 [✓ 18] 20 28 36 72

Color: White [✓ Black] Red Green Blue Lt Blue Yellow Magenta

OK Cancel

GEM DTP offers two fonts in several sizes and styles, as well as a choice of colors.



You and Abe and Bishop Pike might have met April Archer for Chinese dinner, maybe gone to see one more Lamplighters show. You could have discussed some C.S. Lewis novels together on the way back down South and hit a few Mythopoeic Society picnics at GlenGoodknight's.

I'm sure the three (or four) of you could have handled it, then, when David Bowie's space people came to call. Arctor, you could have played your double—agent game to good advantage. I can see you all raising money to melt the moons of Jupiter for water; and even if David funked it up somehow; the Bleekmen would never thirst.

"One does not carry a harmless shoe ad to the bathroom and set fire to it in the bathtub." — — PKD, *Radio Free Albemuth*

So what does one do, anyway? Seth Morley knew. The Walker could be reached through the power of amplified prayer. Saving the life of a cat was real.

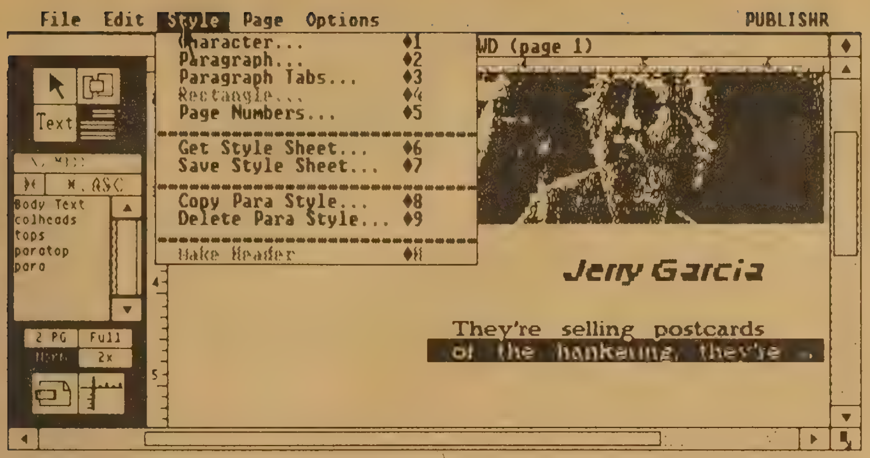
What's real about the last four novels of Philip K. Dick?

1. Orange County may be hazardous to your health.
2. There's a Starman waiting in the sky.
3. The umpire never stranded.

Rulers let you position text precisely on your page.

The GEM (for Graphic Environment Manager) interface is the base which currently supports *Ventura Publisher, Office Publisher* and *GEM Publisher*, as well as other graphic display programs from Digital Research, including *GEM Write, Paint, Graph, Draw+*, and *Wordchart*. (GEM *1stWord+*, a new word processor which incorporates graphics capabilities, is due to be shipped on December 1st.)

GEM Publisher was designed to fit into a whole series of readily usable products which complement each other in the production of Desktop documents. A user who already has *Graph, Draw+*, or *Paint* will reap the most benefit from it, but *Publisher* can stand alone as a useful text/graphic integrator, and the *Desktop* DOS shell is *included in all GEM application packages. Publisher* runs comfortably on a two-floppy 8088/640K/CGA PC. It even runs on a one-floppy PCjr. *Publisher* runs that much better on an AT/EGA/hard disk system, and permits impressive full-page color displays with a Genoa 800 x 600 card. HP LaserJet+ and Apple Laserwriter are supported, and the output on Epson & IBM 9- and 24-pin printers is superior to that of any other publishing program I know of. A driver for the Diablo 630 daisywheel is included with the package, and drivers for the Diablo C150, Quadram Quadjet 9000, HP Thinkjet, High Res IBM, Epson Wide Carriage and Multicolor printers are available upon request from DRI. Hewlett-Packard, Houston Instruments & IBM plotters are supported. The Desktop can also take input from a Polaroid Palette film recorder. The Epson,



Full-sized view of page section, with text and graphics, showing pull-down style menu.

IBM and HP drivers work with any 100% compatible printers, and a PostScript driver for non-LaserWriter compatibles at 300 dpi is also available on request.

The Macintosh with *PageMaker* is said to be the system of choice for Desk Top Publishing, but what about companies already stocked with IBM PCs for financial tasks and word processing? They aren't in the business of issuing frequent publications, but might like to do a company newsletter occasionally. And what about home users who have already purchased cheap XT or AT clones? Perhaps these people would like to have the capability to do more than produce jagged looking greeting cards. There are artists, poets and writers who employ photo-offset, Xerox, and even mimeograph duplication processes to distribute their work. Some of these people do not own or have access to Apple publishing equipment, but can easily reach someone with a $500 2-floppy PC clone and a $200 dot matrix printer.

I run *GEM Desk Top Publisher* on a PCjr. If you run an XT with a hard disk, you'll be pleasantly surprised to learn that DTP will give you about 75% of *Ventura Publisher* for about 50% of the price.

Working With GEM DTP

The *DTP* work screen is very similar to *Ventura*'s. As with most Paint and Drawing programs, you have a toolbox on one side of the screen, work area in the center, and pull-down menu options along the top. If you are familiar with Microsoft *Word*, you will recognize the scroll bars along the side and bottom of the screen, which let you manipulate the work area with a mouse.

Page layout is accomplished basically by using the mouse or cursor keys to draw rectangles in the work area (analogous to *Ventura*'s frames). The work area can be viewed from a full-page or double-page spread to allow you to place the rectangles accurately on the page. In addition to rulers which can be toggled on and off and set to English or Metric measurements, *GEM* has a unique coordinate toggle which appears at the cursor to assist you, so you can easily construct your rectangles to any desired measurement. Once a rectangle has been placed on the page, the toolbox will display a directory of text or graphics files. You point-click with the mouse to read either into a rectangle. (You can also use cursor keys to do anything you do with a mouse in GEM, but generally, the mouse is faster.) Your text or picture will flow into the rectangle you've selected.

If you load a picture into a rectangle it becomes a graphics rectangle, and can be subsequently expanded or shrunk. The picture scales itself accordingly. A picture can also be loaded in at a fixed size, and the rectangle adjusted to display any part of it. (This is called cropping).

If you load a text file into a rectangle, it first appears in the type style and size specified as the default. Later you can reformat text, edit it, or add new text. Again, *Publisher* draws on a feature familiar to MS *Word* users with its style sheets. Default paragraph and character formats are built and saved in style sheet files, which can be loaded automatically or created. The style sheets apply global formatting, so that each paragraph does not have to be set up individually. If you don't specify otherwise, *GEM* will copy the rectangle you've constructed and apply the style sheet to subsequent pages as you page-down through your document. You don't have to set up each page individually, although you can, if you want to. This is one advantage *GEM* has over the current IBM version of *PageMaker*.

Another advantage that *Publisher* has over *PageMaker* is that it runs much faster. As this review is being written, a new release of the *GEM Desktop* program (3.0) is being prepared which runs four times as quickly as the present version. This will be bundled with all GEM products as of the first of December, 1987. Users who register between September 1 and December 1, 1987 will receive the update at no cost. Even *Desktop 2.2* (the previous version) will perform faster than either *PageMaker* or *Ventura*, making use on an ordinary 4.77 MHz PC tolerable. The new version will redraw the screen faster,

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have faster PostScript output and incorporate a real-time mouse driver. Users will now have the option of automatically dropping a menu when the Mouse pointer reaches the appropriate part of the screen, or setting configuration so that a button has to be clicked, as with MS *Windows* applications.

The new *Desktop* will also give *Publisher* the ability to generate PostScript compatible fonts in any point size from 7 to 100 with selective paging of the font you wish to use. This will cut down on the amount of memory the program uses, and save storage space on disk, as only the fonts you need have to be present.

Digital Research and Bitstream have developed a version of Bitstream's *Fontware* Font kit which allows installation of the same 80 typeset fonts which Bitstream offers with *Ventura*. These fonts are produced by a character generating algorithm from outlines in RAM, improving appearance on the screen and producing output which is identical to what you get with PostScript. As of December 1st, *Publisher* will come with four weights of Swiss (Helvetica), four weights of Dutch (Times-Roman) and one weight of Charter. The Bitstream fonts work on non-PostScript lasers and dot matrix printers, as well. Digital Research also licenses a *Fontmaker* tool, marketed primarily in Europe. With the *Fontmaker* tool, you can design your own fonts in any desired typestyle or point size.

The two European and two American page size defaults for printing have been complemented in the new *Desktop* to offer a variety of additional formats, additional paper tray selection, print-to-disk capability and selective page printing. If you have a hard disk you can use the provided spooler to print in the background.

Overcoming Limitations: Editing

Although *Desk Top Publisher* is faster and easier to use than some higher end programs, it does have limitations which you may wish to overcome.

1: Formatted text. When *DTP* reads a text file into a rectangle, it strips out all of the underlining, bolding, and italics instructions put in by

DIFFERENCES BETWEEN GEM DESKTOP PUBLISHER AND VENTURA PUBLISHER

VENTURA PUBLISHER	GEM DESKTOP PUBLISHER
■ Three editing views: normal, 200% and reduced.	■ Four editing views: normal, 200%, full page & double page.
■ Retains formatting codes from *MS Word, WordPerfect, MultiMate* & *Wordstar* files.	■ Reads files from *WordPerfect, Multimate* & *WordStar*, as straight ASCII, no formatting retained. (DTP format codes can be inserted in text).
■ Loads graphics from *GEM, PC Paintbrush, Lotus* & other formats.	■ Loads graphics from *GEM* applications (*GEM Graph* can import *Lotus* graphs which can be used in DTP).
■ Three font styles supplied with program: Helvetica, Times-Roman, Courier.	■ Three font styles supplied with program (Swiss, Dutch, Charter).
■ Manual kerning.	■ Automatic kerning.
■ Built-in drawing tools.	■ No built-in drawing tools; incorporates icon-pictorial headers & footers created with *GEM Draw+*.
■ Automatic footnote & index generation.	■ Footnotes & index must be handled separately.
■ Edits 8-column text.	■ Edits 4-column text.
■ Requires hard disk.	■ Runs on 2-floppy system or hard disk (can be made to run on single-floppy PCjr!).
■ Runs sluggishly on XT system--requires AT to run comfortably.	■ Runs comfortably on ordinary XT system.

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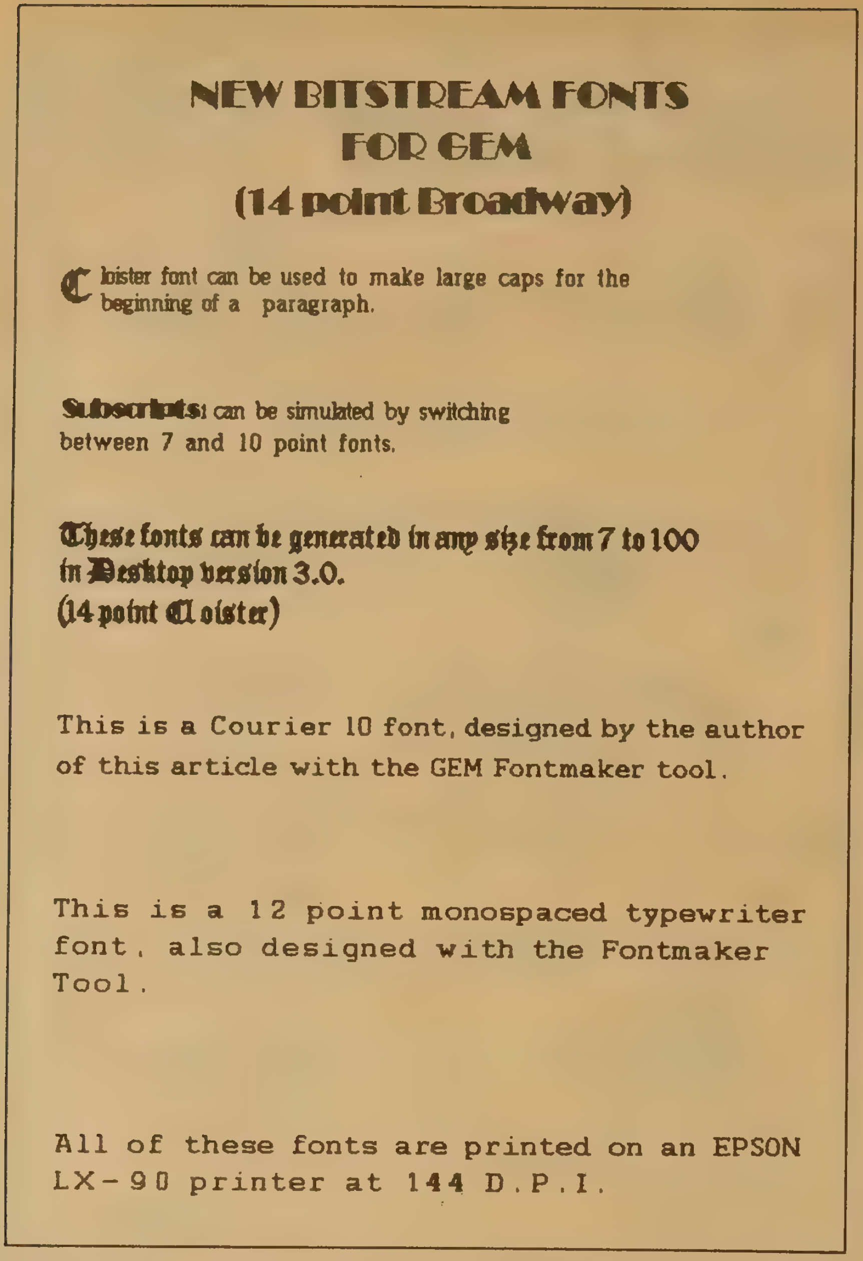

NEW BITSTREAM FONTS FOR GEM
(14 point Broadway)

Cloister font can be used to make large caps for the beginning of a paragraph.

Subscripts: can be simulated by switching between 7 and 10 point fonts.

These fonts can be generated in any size from 7 to 100 in Desktop version 3.0.
(14 point Cloister)

This is a Courier 10 font, designed by the author of this article with the GEM Fontmaker tool.

This is a 12 point monospaced typewriter font, also designed with the Fontmaker Tool.

All of these fonts are printed on an EPSON LX-90 printer at 144 D.P.I.

Bitstream offers a variety of type styles and let you design your own fonts.

your word processor, although tabs are preserved. One way around this is to make use of *DTP*'s own insertable text format codes. You can either get used to typing in a ‹U› whenever you want to underline as you prepare your first draft, or use your word processor's native formatting, then build find and replace macros to substitute the GEM codes. In *WordPerfect*, for example, you would find all the [U]'s and replace them with ‹U›'s. *WordStar*, *MultiMate* and *PCWrite* work similarly. With Microsoft *Word*, you've still got to do an ASCII save or print to disk and use macros in a text editor to replace the printer codes.

2. Creating text in a rectangle. *DTP* only allows you to add text to a rectangle which already has text read into it. To get around this limitation, you can create a special text file with only one space character to read in. From DOS just Copy Con: Fill.Txt, hit return and type in one space, hit Ctrl-Z to save the file. Then you can make a rectangle of any size you like, read in Fill.Txt and type in whatever you want. If you want to do this for more than one rectangle, you need to make several filler files, Fill1, Fill2, etc.

3. Drop Caps. You can create a drop cap to begin a paragraph by creating a small rectangle, read in Fill.Txt and then type the single letter. Set the letter in the desired point size, then use the mouse to position the rectangle at the beginning of the paragraph. Make the rectangle transparent and adjust the paragraph text, if need be.

4. Subscripts/Superscripts. *DTP* does not have the capability to insert these. You can fake a subscript by doing a font change to a smaller font. To do a superscript, you'll either have to insert a small rectangle with the number in it, or get the *Fontmaker* tool to design a special raised font. Footnotes have to be formatted in your word processor. If you want them to appear on the same page, get your word processor to print to disk and then read in the disk file, or save the footnotes by themselves as special files and create rectangles at the bottoms of the appropriate pages to read them into.

Overcoming Limitations: Graphics

DTP reads in graphics only from GEM programs. If you want to incorporate a Lotus graph, you can import it into *GEM Graph*, if you have the program, and then save it as a .GEM file. If you want to load pictures from other sources, here are a few suggestions.

1. For $99.95, The Graphics Link offers *PC-Kwikart*, which converts file formats from *PC Paintbrush*, *DR HALO*, *PC Paint+*, *MS Windows Paint*, *EGA Paint*, *MacPaint (IBM READMAC)* and *BASIC BLOAD/BSAVE*.

2. For $79.95, *Optiks* is an excellent Paint Program utility which does file conversions in all of the above formats, plus uncompressed Aldus TIFF, Lotus PIC, Fontasy, First Publisher Art, EFS IMG, RICOH PIG, IBM ISF, COMPUSERV RLE, and uncompressed WIPS.

Optiks is also a small Paint application in itself, allowing you to enhance images by setting a virtual page mode in VGA, EGA, WYSE 1280, AT&T TARGA, CGA, Hercules and other resolutions, load a picture, do fat-bit editing, draw geometric shapes & fill patterns, resize and copy parts of the picture and print or save to disk in any file format. Several scanning devices are also supported, allowing you to scan images into the program and save them in any file format. *Optiks* includes several screen-remapping algorithms to clean up the image with gray-scale smoothing, contrast emphasis, or smoothing of stepped diagonals.

3. If you have a modem you can find various BBS systems offering Public Domain and Shareware screen capture utilities. One called GEMCAP will let you take any screen and dump it to disk in a .IMG file format. Another called GRCP will let you capture any screen and paste it into *GEM Paint*, where you can work on it and save it to an .IMG file format. These BBS systems are also a good source for obtaining free clip art in various file formats.

File Management On Floppies

1. Use of Output Application. The way GEM is currently set up to print, you must exit the *Publisher* and return to the Desktop if you run it on floppies. This can be gotten around by making GEM think that you've installed on a hard disk system. You can do this either by installing all of the GEM files on a 720K floppy and telling the program it is on a hard disk, or by using the DOS Join command and making one floppy a subdirectory of another. The program will then let you print directly from *DTP*.

DTP currently insists that all files which make up a document come from the same floppy disk, and will not let you transfer documents from one floppy to another without first loading the document into the program and then saving it to a different drive. You can get around this with the DOS Join command. If GEM thinks that Drive B: is a subdirectory of Drive A: called /Extra, it will copy or save anything there that you want it to.

2. Easier access to the Desktop. When run on floppies, GEM insists that you swap disks whenever you return to the Desktop, displaying the Giant Hand with its insert disk message whenever you exit a GEM application. To banish the Giant Hand, copy the GEM *Desktop* files to a small 80K RAM disk and put a path statement in your Autoexec, or use the DOS Join command to make the RAM disk a subdirectory called /GEMDESK of your boot drive. You will then return to *Desktop* automatically after exiting an application, and access it initially with no insert disk messages. ☐

Resources

GEM Desk Top Publisher ($395, list), *Draw+* ($295, list), and *1st Word+* bundled with *Paint* ($295, list) are all available from Digital Research, Incorporated, 60 Garden Court, Box DRI, Monterey, CA 93942 (Telephone: 800/443-4200). You may find these products considerably discounted through various independent dealers.

Additional Font packages are available from Bitstream, Inc., 215 First Street, Cambridge, MA 02142 (Telephone: 800-522-3668). The *Fontmaker* tool, and other custom fonts are available from Specific Solutions, 1869 Anthony Ct., Mountain View, CA 94040 (Telephone: 415/941-3941)

PC-Kwikart is available from The Graphics Link, 394 S. Milledge Ave., Ste. 200, Athens, GA 30606 (Telephone: 1-800/523-1796)

Optiks is available from Keith Graham either via mail at 238 Germonds Road, W. Nyack, NY 10944, or by subscribing to the PC Rockland BBS service where it can be downloaded. Subscribing to the BBS also gets you into an on-line *Optiks* conference, and access to over ten megabytes of scanned clip-art. Orders by mail are $79.95 plus $10 to handle cost of disks. Subscription to *Optiks* via PC Rockland (Telephone: 914/353-2157) is $79.95 for one year.

GENCAP, MAC2GEM, GRCP and other shareware graphics utilities can be downloaded from various free BBS systems including The Pixel Penguin (415-655-2689) PC Picture Swapline (714/545-8100), and the free node of PC Rockland (914/353-2176) (The Free node of Rockland does not get you access to *Optiks*, although there is a public domain version available which will not save files in all the esoteric formats).

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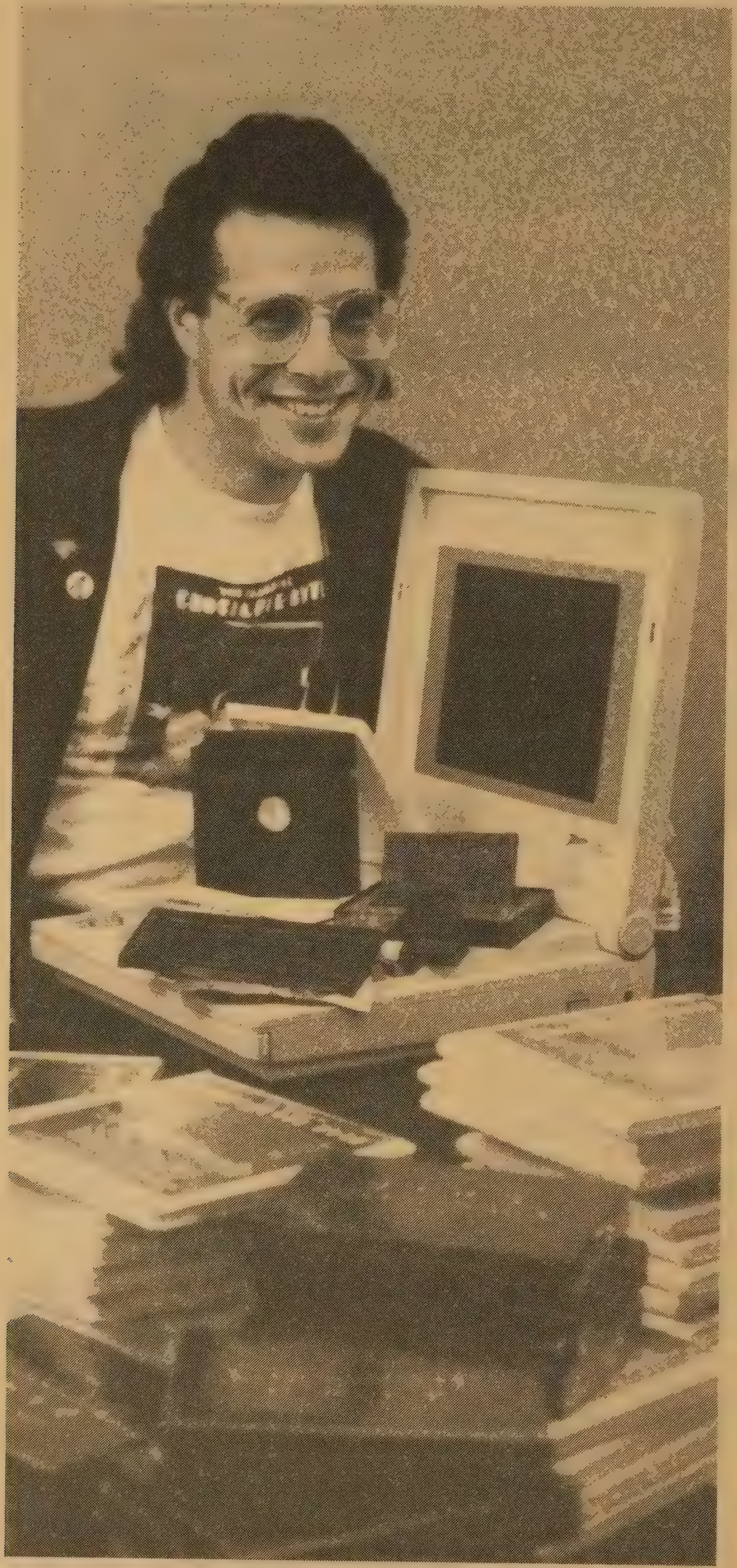

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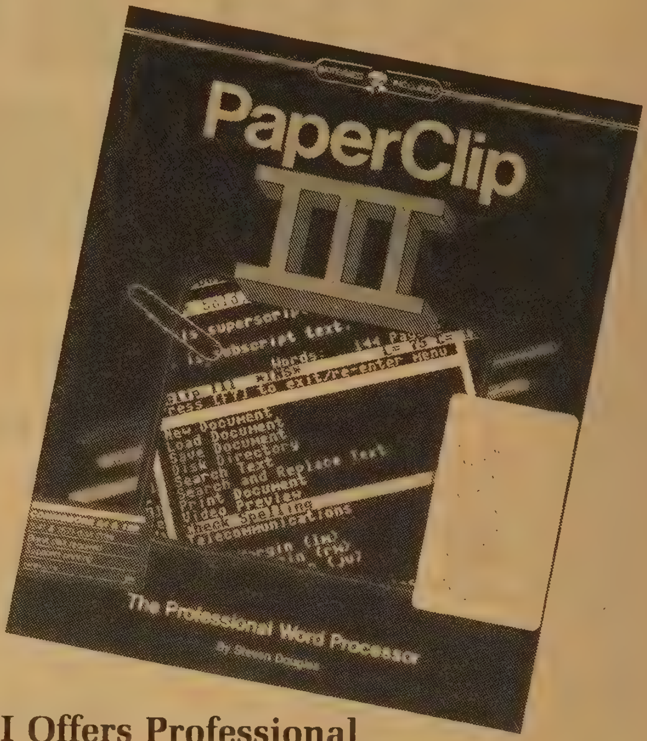
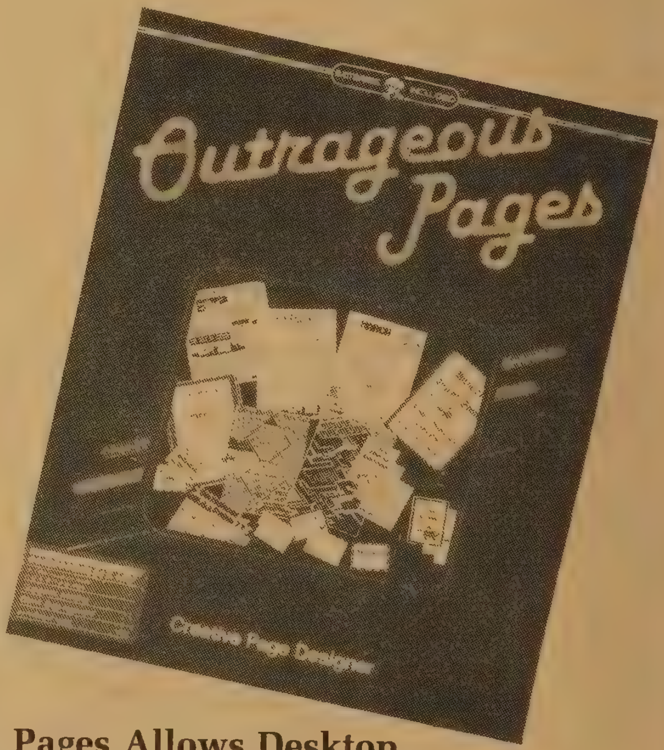


PaperClip III Offers Professional Word Processing On The Commodore

PaperClip III, part of the Batteries Included line from Electronic Arts, offers the Commodore 64/128 user professional word processing capabilities. Among its abilities *PaperClip III* lets the user preview documents before printing in 40, 80 or 160 column mode with four way scrolling. It has an automatic table of contents generator and a built-in 40,000-word spell checker. It also includes built-in telecommunications capabilities that allow the user to transmit or receive text by modem while running *PaperClip*. *PaperClip* includes dozens of printer files as well as the ability to let users create their own, thus making it compatible with virtually every popular printer. ($49.95) Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.



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Outrageous Pages is a full paint and graphics/layout program for the Commodore 64/128 from Electronic Art's Batteries Included line. *Pages* features a full page, full power paint program, text formatting, a font and pattern designer and complete printer control. It includes 50 different fonts and over 80 art pieces, patterns and borders. *Outrageous Pages* has pull down menus and icons, pre-created templates for quick design and supports joystick or mouse control. It is also compatible with *Newsroom* and *Print Shop* graphics data. ($49.95) Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

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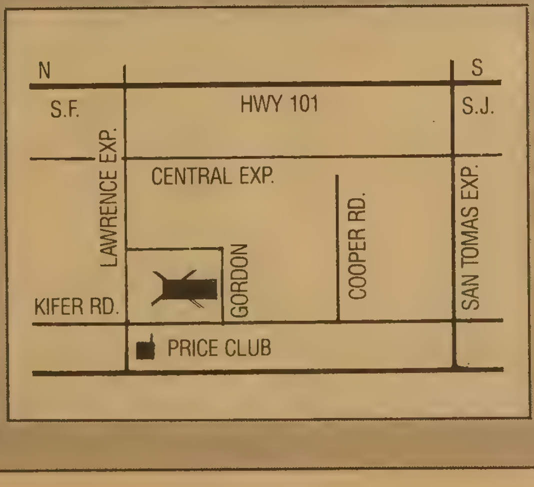

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The Return Of Lisa

Or, Why The Mac's Older Sister Can Do Your Work And Save You Money

By Mary Eisenhart

It's no particular secret these days that the Macintosh is a great computer. However, it's never been the choice of users on a tight budget — the current entry level machine is the Plus, which lists at $2199 and gives you the basic one-meg Mac with one internal floppy disk drive. Add the cost of a hard disk, a virtual necessity these days, and you've spent about another thousand (Apple's non-SCSI 20 megabyte drive lists for $999, and the SCSI 20 meg drive for $1299). Even allowing for dealer discounts, this is more than many users are prepared to pay, especially considering the fact that they've still probably got to get a printer, a modem, and, of course, software. Consequently, many of them heave a sigh of regret, decide that the joys of Macintosh are out of their price range, and attempt to console themselves with a low-cost PC clone.

They could, of course, buy a used Mac. These machines are in fairly plentiful supply in many areas, as Mac users trade in their old machines on new ones. Like any purchase of used merchandise, however, this option is not entirely risk-free; how well it would work for you depends mostly on your relationship with the dealer you buy the used machine from, and his support policies.

For many individuals and small businesses, though, the best solution may lie with the Mac's elder sister, the Lisa/Macintosh XL, which is, in its current incarnation, the closest thing to a Macintosh clone you'll find in the foreseeable future. Thanks to the diligent labors of Utah-based Sun Remarketing (unrelated to Sun Microsystems) and Apple itself, the supposedly orphaned Lisa offers a safe and attractive low-cost option to both the first-time Mac user and those interested in expanding their Mac network and saving some money in the process.

First, A Little History

Sun Remarketing, which began its existence as Sun Data, was originally a developer of software for the Apple III. When Apple discontinued the III, Sun worked out a plan under which it would not merely liquidate Apple's existing inventory but would continue to service and support the III — and continue upgrading and developing it. This arrangement worked to the benefit of Apple, Sun, and users of the III, so that when the Lisa fell victim to another product line reorganization, a similar agreement took place.

Sun currently sells new and reconditioned Lisas in a variety of configurations, starting with a basic reconditioned unit with a single-sided 400K internal disk drive, a megabyte of RAM and a five-megabyte ProFile hard disk for $995. Additional options include a double-sided 800K disk drive for $200 and a 20-megabyte internal hard disk which attaches to the Lisa's parallel port and costs another $750. The package includes documentation, the original *MacWorks* software (which allows the Lisa to run software written for the Macintosh), and Sun's own software which lets the machine support HFS (Hierarchical File System).

The Lisa we reviewed had a 20 megabyte internal drive and a 400K disk drive; since we've had the machine, Sun has begun offering the 800K option. At the same time, the hard disk software has been improved so that it's now possible to boot directly from the hard disk. In making these two improvements, Sun has eliminated the two major inconveniences involved in using the Lisa.

Is Lisa For You?

While we found that the Lisa was functionally just about indistinguishable from our various 512Es and Pluses (except for the now-corrected nuisance value of the single-sided disk drive), there are a few things it won't do and probably never will. If these functions are high on your list, you'd do well to stick with the appropriate standard-issue Macintosh.

For one thing, it's unlikely that you'll be seeing Mac II color on a Lisa any time soon.

For another, if portability is one of your requirements, cross Lisa off your list unless you're Arnold Schwarzenegger. This is definitely a desktop machine, with a footprint approximately equal to that of three Pluses and a weight to match. (On the other hand, there's a vast expanse of flat space on top of the machine where peripherals could take up residence.)

The most serious limitations, though, have to do with compatibility and upgrade path. Current Macs are based on 128K ROMs whose technology Apple is keeping proprietary. As a consequence, some software which requires a Plus, SE or Mac II will not run on a Lisa. Sun is looking at various solutions to this problem; according to advertising and marketing director Bud Spencer, the likeliest approach will involve Sun writing special software specifically for popular software packages requiring the new ROMs to enable them to run on Lisas. Given Sun's track record in keeping its machines current, a compatibility solution will probably be along Real Soon Now; in the meantime, if your planned use of your prospective machine depends on a particular software package, it's probably a good idea to phone Sun and ask whether it currently runs on the Lisa.

Also, current Macs utilize SCSI (Small Computer Systems Interface) technology in their storage devices for quicker, more efficient data access. The Sun hard disk installed in the Lisa represents a considerable improvement in efficiency over the original ProFile and Widget disks, but it's not SCSI. In day-to-day operation, we didn't find that this was much of a problem; the Lisa wasn't noticeably slower than Pluses with 20 meg SCSI disks elsewhere in the office. However, if daisy-chaining SCSI devices is a priority for you, it's not something the Lisa can accommodate at this point.

Hands On

We used the Lisa for the same tasks the editorial Macs perform, mainly word processing, text editing and file transfer using *MacWrite* and *MicroPhone*. We also had occasion to prepare some documents in *PageMaker*

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> **If you're the type who has to have the newest, slickest, and fastest of everything, the Lisa's probably not going to be your choice. If you like the Mac's ease of use and functionality but can't afford its price tag, you probably ought to give the Lisa some serious consideration**

2.0, which performed admirably. (*Excel* 1.0 and *Word* 3.0 also seemed to work just fine, though we had less occasion to use them extensively.) Printer and modem connections use slightly different cables from their Mac Plus equivalents (25-pin serial cables with, in the case of the ImageWriter II, an Apple null-modem adapter), but are otherwise problem-free.

In some ways the Lisa's differences from its younger siblings are a positive advantage. The screen, for instance, is substantially larger than that of the Mac, measuring 12'' diagonally. Whether this is of any particular advantage to you depends on the software you're using — *MacWrite*, for instance, ignores the larger screen and runs in its own normal-sized window, while *MicroPhone* cheerfully uses the wider display to emulate wide-screen terminals.

In our experience, the Lisa's screen flickers appreciably less than the Mac Plus' display, even without benefit of the anti-glare screen Sun thoughtfully provides. (The monitor itself is a rather disconcerting hybrid that appears Mac-ishly black and white, with the occasional hint of a green/black phosphor display lurking underneath. When you highlight text or turn the machine off, there's a split-second flicker of green). Another plus is that the resolution and brightness controls are conveniently located at the back of the machine for easy adjustment. Additionally, the Lisa has a built-in screen dimmer that darkens the display after a short period of inactivity.

Religious wars are fought regularly on the subject of keyboards. As far as I'm concerned, the Lisa's keyboard, for all its bulk, combines the best features of the original Mac keyboard (Selectric-like layout with decent-sized shift keys) and the Plus keyboard (numeric/cursor keypad off to the right). The keys have a good solid feel and spring back readily, and, if you first learned to type on a typewriter, you'll appreciate the fact that nobody seems to have taken creative liberties with the layout. No backslashes where you'd expect a shift key. No arrow keys where you want a spacebar.

Setup and installation of the hard disk were easily done using Sun's brief but lucid manual (if you're at all familiar with Macs, you'll probably save yourself considerable pain and suffering by reading the Sun documentation first, since much of the information in the also-included Lisa manual is obsolete); it should be even easier now that the autoboot software for the hard disk is available. Once that's done, the Lisa looks, feels and behaves just like a Macintosh.

Sun's tech support was both patient and helpful. Dire visions rose in my head one day when, after a rather clumsy move to a new location, the Lisa couldn't seem to find its own hard disk. The saintly soul in tech support assured me that I probably hadn't broken the machine at all and ventured the shrewd (and accurate) guess that the hard disk had managed to unplug itself in transit. Everything's worked in a very straightforward manner ever since.

Conclusions

Sun particularly recommends the Lisa for two uses: as a dedicated file server (with the 20 meg hard disk) for the small office, and as an individual desktop workstation running Macintosh applications. We used the machine in the latter context and are very pleased with its performance.

If you're the type who has to have the newest, slickest, and fastest of everything, the Lisa's probably not going to be your machine of choice. If, on the other hand, you like the Mac's ease of use and functionality but can't afford its price tag, you probably ought to give the Lisa some serious consideration; a key factor in your decision is probably the issue of whether your particular software of choice does or doesn't require Mac Plus ROMs. If it doesn't, the Lisa offers you solid performance and the familiar Macintosh interface at a highly attractive price. (Sun Remarketing, P.O. Box 4059, Logan, Utah 84321, 801/752-7631.) ☐

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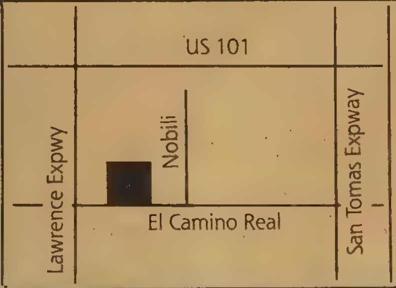

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Powerful Database Software For Non-Gurus

DataEase

By Robert Beauchamp

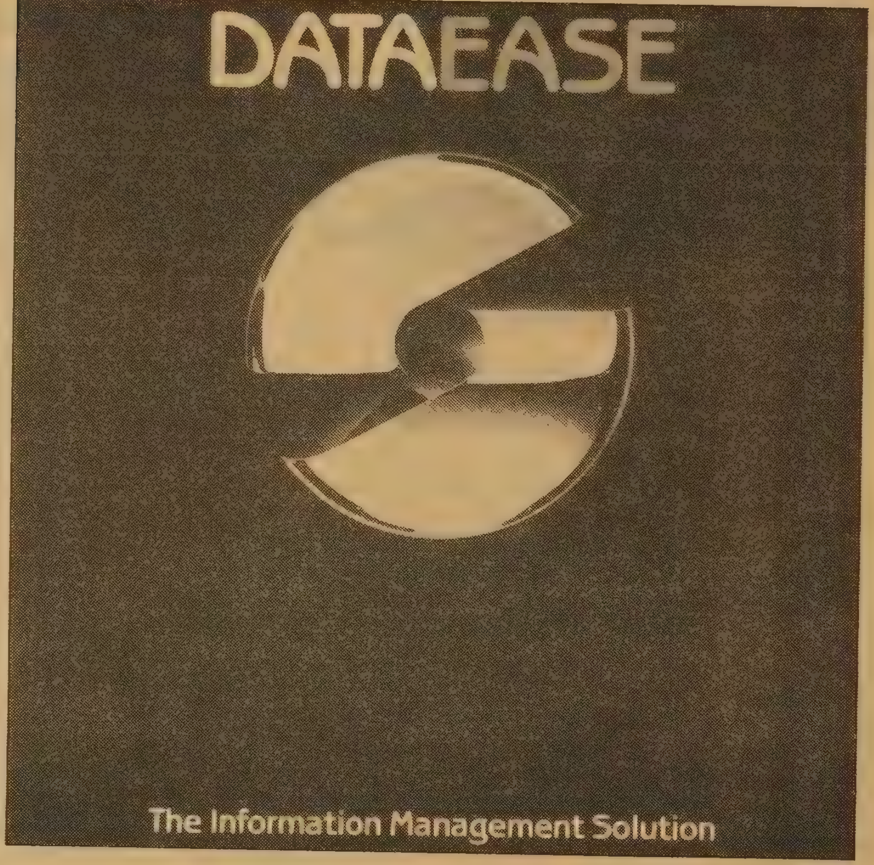
At a recent seminar in San Francisco, DataEase International was showing off its database. Its representatives hailed their product, *DataEase*, as simple enough for a novice user to operate, yet powerful enough to satisfy the demands of a professional systems analyst or MIS manager.

Such claims, of course, are all too common as software developers try to tap into the lucrative business marketplace. Especially as they struggle to meet two conflicting demands: attaining the software nirvana known as zero learning curve, and withstanding the condescending glares of firmly entrenched database programmers.

To satisfy the professionals, DataEase brought out the charts and graphs and a host of experts to explain the difficulties of micro-to-mainframe connectivity and how *DataEase* could help. To prove its ease of use, they introduced one of the program's users: a woman from Intel Corporation who had designed a database using *DataEase*. She had majored in English at college and started at Intel as a secretary.

Not only could she use *DataEase*, she had created a database that kept track of hundreds of thousands of pieces of Intel's returned merchandise — which previously existed in a state of limbo in which no one knew how much there was, what condition it was in, who returned it and for what reason. Also, the merchandise was kept in warehouses across the country and in several foreign countries. Not only did she devise a database to do this, she did it in her spare time, in addition to her secretarial duties. Using *DataEase*, its publishers proclaimed, she saved Intel a ton of money. She also received a promotion and a raise. The point being, of course, that *DataEase* is truly easy for anyone to use.

Our experience bore this out. What makes *DataEase* so amazingly simple to use is its integrated menu system. All the options you have at any particular point are displayed on the screen. All you do is make a choice. This frees your mind from the drudgery of programming and allows it to concentrate on the more cerebral aspects of planning your database structure.



Creating Databases

There are five major aspects to creating a database with *DataEase*: form definition, record entry, building relationships, creating reports and customizing menus. Each one builds upon the other, allowing the novice to grasp all the important concepts quickly.

We used *DataEase* on a Club AT 286 machine with 1.2 MB of memory and a 20MB hard drive. *DataEase* requires 384K of memory and two floppy drives, although at least 512K of RAM is recommended. The amount of memory you have on disk will, of course, limit the size of your databases.

Set-up is straightforward. You simply copy the two *DataEase* disks (it's not copy protected), and select System Administration from the main menu. Here you tell *DataEase* the type of monitor, graphics card and printer you will be using.

Creating A Form

The first step in creating a database is creating a form. A form is made up of a number of fields. Each field contains a specific piece of information. Once a form with its fields is filled with information and saved it becomes a record, the basic building block of a database.

After you give the form a name, *DataEase* puts you in the form editing mode. On the bottom of the screen are listed the form editing functions and their corresponding function keys. These include moving the cursor, moving, deleting and copying text and blocks of text, and adding and deleting lines. When you're first getting used to the *DataEase* menus you can scroll using the arrow keys to choose an item off the menu and then hit return. Once you've become more used to *DataEase*, however, you'll just hit the right key for each choice naturally.

Defining Fields

Once you've located a field on the form and typed in what you wish to call that field on the form, you press F10 to define the field. *DataEase* then shows the field definition screen. You tell *DataEase* what name you wish to give to the field. This name may be different from what you have on your form screen; the name on the form will be seen by the data entry person, but the name in the field definition menu will only be seen by the programmer. Then you tell *DataEase* what type of field this will be.

The field types in *DataEase* are text, numeric string, number, date, time, choice, and yes/no. When you come to this question on the form definition screen, these options are displayed at the top of the screen. You then simply press the number that corresponds to your choice. Depending on your choice, you may also get another menu offering you another set of options.

For example, numeric strings are number fields where no calculations are allowed. *DataEase* offers you the choice of an unformatted field of up to 255 digits, a field for social security numbers, telephone numbers, or a format of your own creation. When the form is being filled in by the data entry person, it will show up on the screen with the proper format. A social security number field will have three spaces, a dash, two spaces, another dash and four spaces. All the data entry person has to do is fill in the numbers.

DataEase allows programmers to carry this choice theme over into their own databases. When defining the field, one of the options is "choice." After selecting choice, *DataEase* lets the programmer type in the options to be made available to the data entry person. When the data entry person comes across a choice field when filling in records, the choices provided by the programmer will appear across the top of the screen. The data entry person can choose from up to 99 items of up to 60 characters each by pressing one key. *DataEase* then automatically enters that choice into the field. As each choice is only typed in once by the programmer, not hundreds of times by the data entry person, this cuts down on a lot of typing.

Another decision in defining a field is whether it should be a "derived" field. A derived field is one in which the contents of the field are determined by a calculation or information gathered from another form altogether, and not by what the data entry person types in.

For example, an employee's age could be derived from the birth date field and the present date field. To do this, the programmer simply puts the proper formula in the form definition menu when prompted to do so. The formula for deriving an age is: (Date Entered*Date of Birth)/365.25. Date Entered is the name for the current date field, * means mul-

continued on page 109

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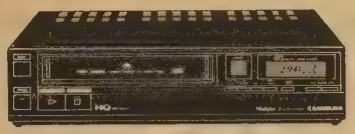

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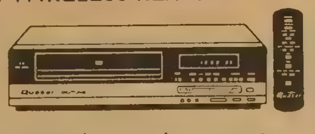

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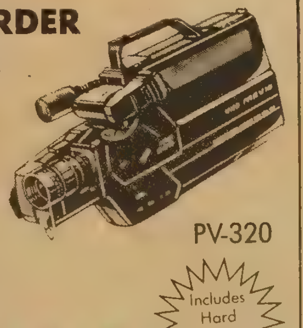

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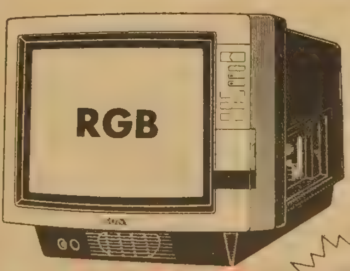

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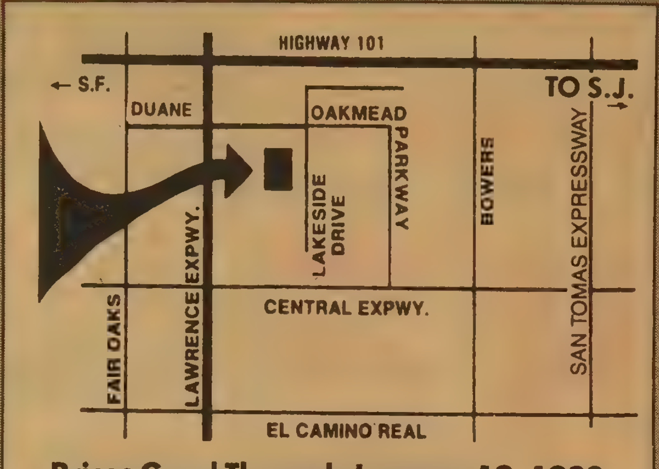

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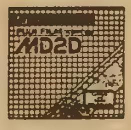

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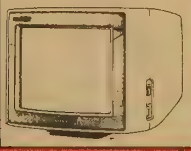

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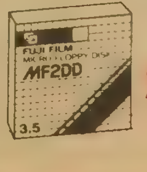

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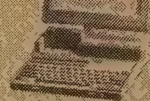

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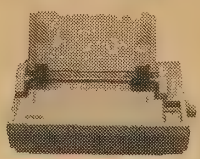

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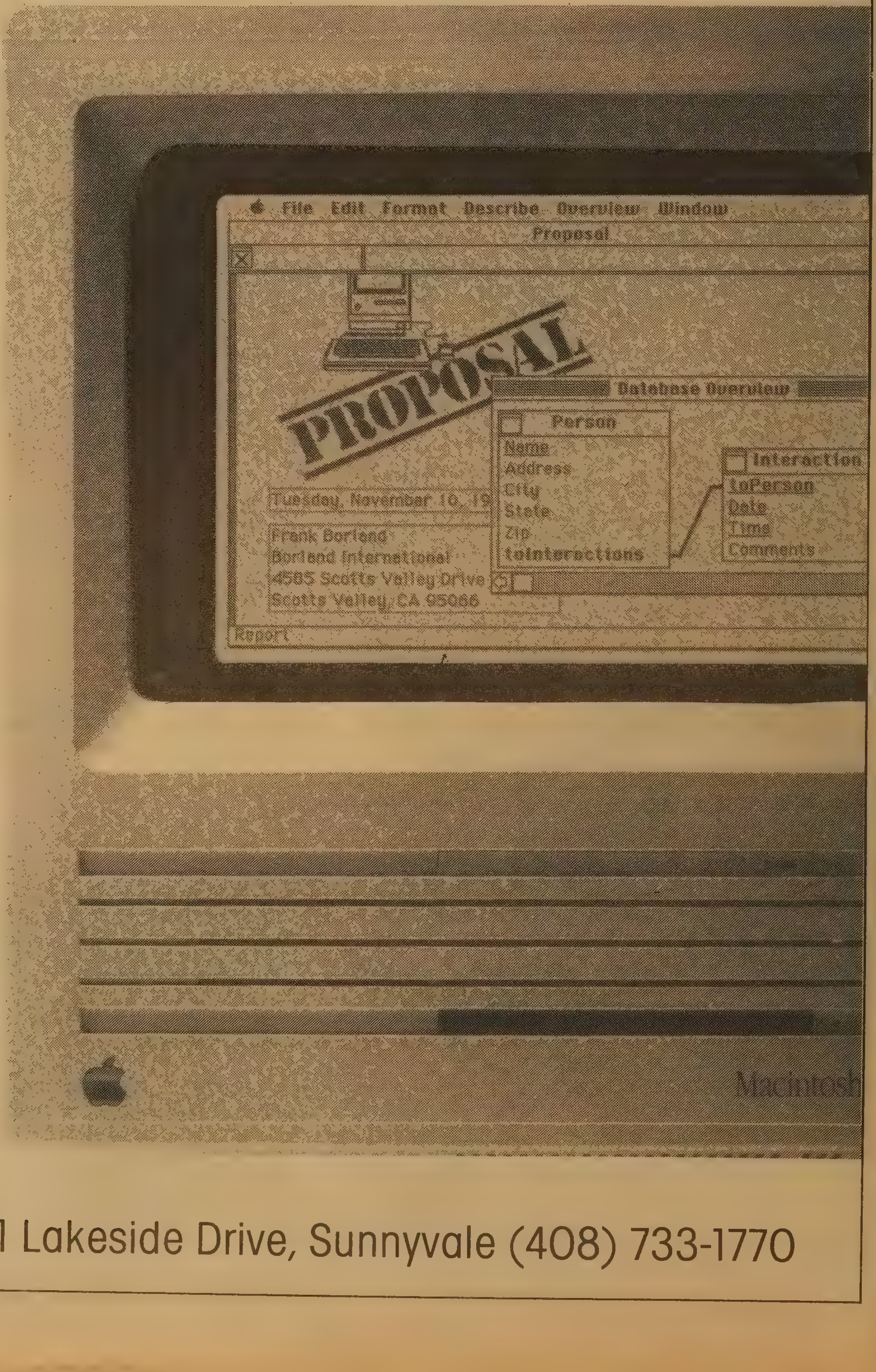

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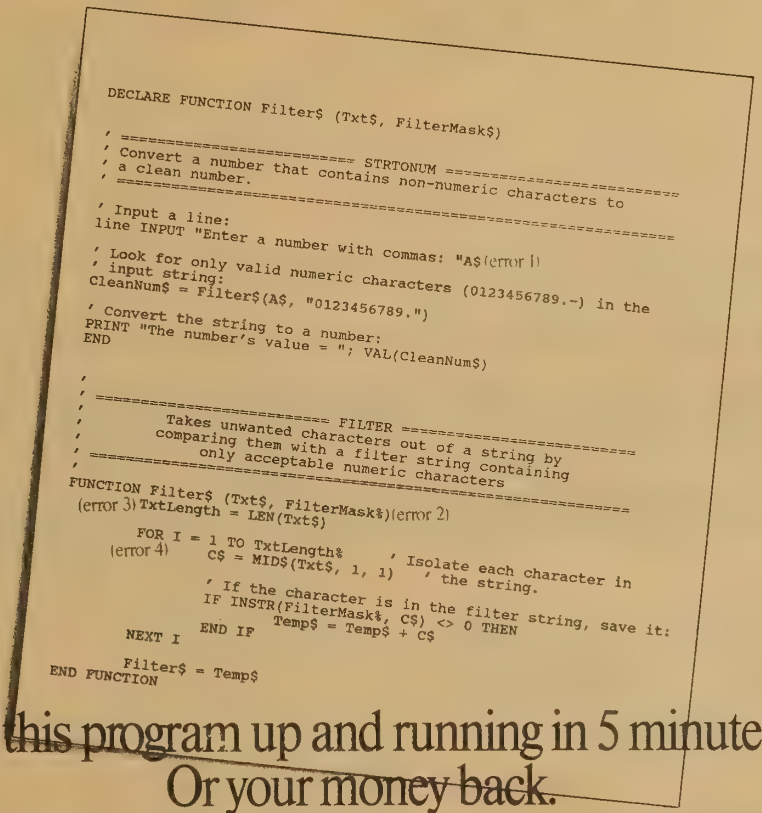

```
DECLARE FUNCTION Filter$ (Txt$, FilterMask$)

 ' ======================== STRTONUM ========================
 ' Convert a number that contains non-numeric characters to
 ' a clean number.
 ' ==========================================================

' Input a line:
line INPUT "Enter a number with commas: "A$(error 1)

' Look for only valid numeric characters (0123456789.-) in the
' input string:
CleanNum$ = Filter$(A$, "0123456789.")

' Convert the string to a number:
PRINT "The number's value = "; VAL(CleanNum$)
END


'
' ======================== FILTER ========================
'        Takes unwanted characters out of a string by
'        comparing them with a filter string containing
'          only acceptable numeric characters
' ========================================================
'
FUNCTION Filter$ (Txt$, FilterMask%)(error 2)
(error 3) TxtLength = LEN(Txt$)

     FOR I = 1 TO TxtLength%         ' Isolate each character in
(error 4)   C$ = MID$(Txt$, 1, 1)     ' the string.

          ' If the character is in the filter string, save it:
          IF INSTR(FilterMask%, C$) <> 0 THEN
               Temp$ = Temp$ + C$
          END IF
     NEXT I

     Filter$ = Temp$
END FUNCTION
```

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Of course, other BASICs will catch errors like this. Eventually. But none will catch the fact that integer variable *FilterMask%* (error 2) should be a string variable.

Let alone give you the incredible ability to edit and continue. For example, you can step through the FOR loop, go back and correct *TxtLength*'s missing "%" (error 3), then resume execution from that very statement.

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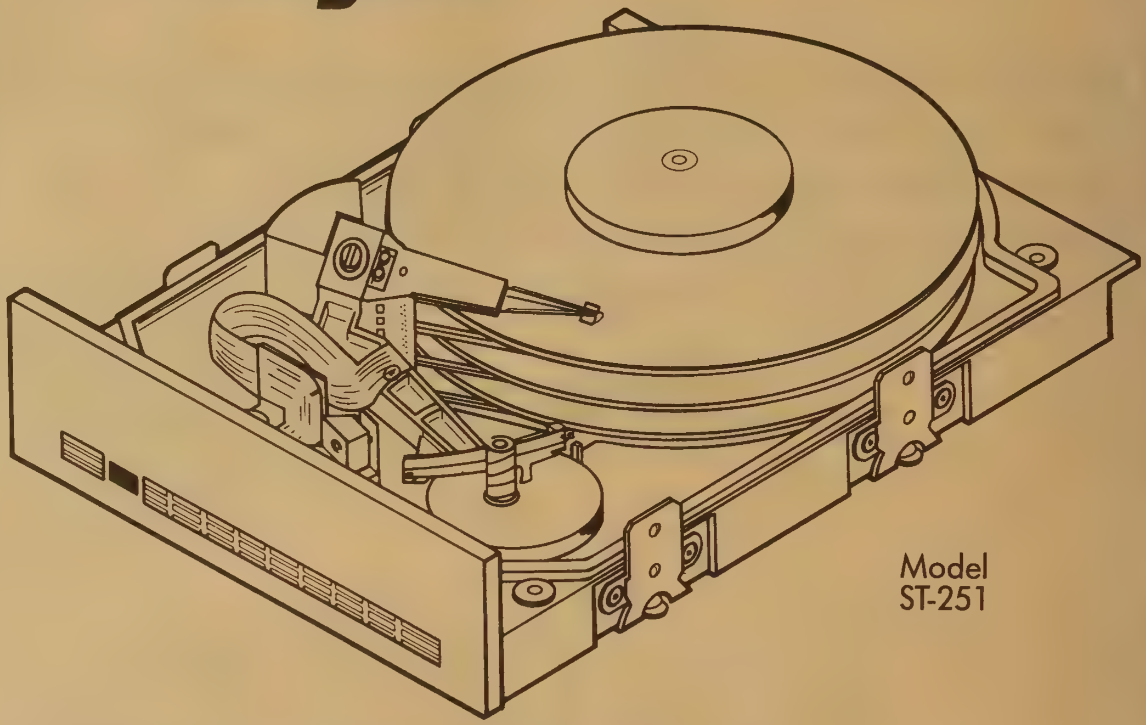

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DataEase *continued from page 98*

tiply, Date of Birth is the name of the field containing the employee's birthdate; the parentheses indicate that this calculation should be done first, before dividing the product by 365.25.

While the programmer did have to type this formula in, its complexity does not extend beyond basic math; it is also provided as one of the numerous examples of equations in the *DataEase* documentation, along with formulas for salary, social security tax and loan installment payments.

Another way to derive a field is to have *DataEase* "look up" the information from another file (a collection of records) in the database and automatically put it in this field. To do this, the user must delve into another one of the five major aspects of *DataEase* — building relationships. Since this is a derived field, you must use a formula to tell *DataEase* to look up the other records and supply the information for this field. An example provided by *DataEase* is looking up the item name from the file named Products. The formula for this is: lookup PRODUCTS "Item Name".

To build the relationship between two fields of two different forms, which you need to do to make this formula work, you then call up the form relationship screen.

The form relationship screen asks two simple questions, the names of the forms that have a relationship, and the names of each of the fields that correspond to each other. Again, your choices are on the screen, as *DataEase* is keeping track of the forms and fields you have already created for this database. After you pick the name of the forms from a menu, another menu appears at the proper time to tell you which fields are in that form to choose from.

Now when your data entry person goes to fill in the form to create a record, they can skip over this field, because *DataEase* will have already filled it in from the information kept in another record. All the programmer had to do was give the field a formula telling *DataEase* where to look for the information and tell which fields were to have a relationship.

> **What makes DataEase so amazingly simple to use is its integrated menu system. All the options you have at any particular point are displayed on the screen. All you do is make a choice.**

Creating Reports

After you have created your form and fields, and the data entry person has filled them with information, thus making them records and files, you will want to create reports that assemble all this information in a concise manner.

DataEase has two types of reports: quick and full. For the most part reports will be of the quick variety. To create this type of report, you simply define the fields of a form that you want in your report and the order you want them in. You then define the format of your report, or how it will look when printed, and then run it, letting *DataEase* generate it for you.

Probably the hardest part of *DataEase* is creating full reports. This is where you explore the mystical secrets of query language. You use the query language to create complex reports that assemble information from a number of files in the order in which you want it to appear. Query language is also used to take this information and produce new information through mathematical formulas.

DataEase has made using and learning its query language as simple as possible. The language is English-based and takes a common sense approach to creating queries. There are still rules which must be followed, however.

To make remembering these rules easier, *DataEase* has what is called an interactive mode. In interactive mode the programmer is prompted at each point by a number of choices, much like the procedure when creating forms or defining fields. After each choice is made, *DataEase* automatically provides the correct "punctuation" necessary according to its language's rules to create a query.

For example, in the simple query:

```
for PRODUCTS
;
list records
Item Name;
Ordered;
Amount Paid;
Unit Cost;
Unit Price.
```

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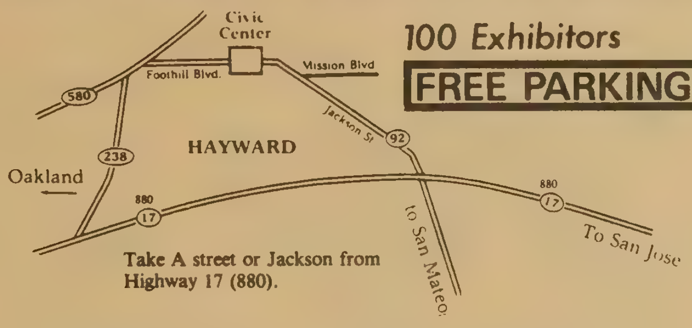

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DataEase has made using and learning its query language as simple as possible. The language is English-based and takes a common sense approach to creating queries.

DataEase in interactive mode would have automatically entered the for command, semicolons and periods, and put them all in the right format. The programmer in this case simply chose from a menu what file to make the report from, PRODUCTS, and what fields from that file to put in the report, Item Name, Ordered, etc.

While advanced programmers will not need to use the interactive mode, the prompts and menus *DataEase* provides are a great help to the novice user.

Customizing Menus

The last major aspect of *DataEase* is the ability to customize menus. By customizing the menus in *DataEase* you can provide security and maintain the integrity of your database. When creating menus you can assign each user a password to get into the database and a security level. Each menu option will have a security level assigned to it, so no one will be able to get into a section of *DataEase* where they don't belong.

For example, when a data entry person logs on, that person will provide a name and a password. At this point their own personalized menu will appear. They pick the area they wish to work in, and *DataEase* sends them right to it. If their job is solely to enter data, then they will never know that there are other aspects to *DataEase* besides the forms they are assigned to enter data into.

Another example might be a manager who needs to create reports but does not need to alter the structure of forms. The manager's menus would only show options for creating reports.

To customize menus in *DataEase*, once again you use the menu definition screen. Here you type in the menu's name, the choices in each menu and the function of each choice. The function can be, among other things, a "user menu" which sends the user to another menu of choices, "record entry," which takes the user to a form, and "run report" which will let a user create a report.

This gives you an idea of how the major aspects of *DataEase* — form definition, record entry, building relationships, creating reports and customizing menus — work. However, there are a few more features.

Other Features

Among the many additional features of *DataEase* is that it gives you the ability to use DOS commands while in the program. It also allows you, given enough memory, to leave *DataEase* and work in another program, and then come back into *DataEase*.

DataEase allows you to import files in several formats including *Lotus*, *dBASE II* and *III*, DIF, Variable Length and Fixed Length. It will export files in *Lotus*, DIF, *MultiMate*, Variable Length and Fixed Length formats, among others.

Some of *DataEase*'s limitations are: forms per database, 255; records per form, 65,535; fields per form, 255, reports per database, 255; fields per report, 255 and number of forms accessed at one time, 28.

Tutorial

DataEase provides a thorough tutorial that answers the question: Where do TV characters such as Mary Richards, Archie Bunker and Ralph Kramden go after their shows are cancelled? They all go to work for Presidential Electronics, which needs to take their index card company and bring it into the computer age.

Your job in the tutorial is to make a database and create reports so you can tell your bosses whether this company will be a good acquisition, ignoring the fact that Ed Norton is a manager. At any time, the executives may descend upon you asking for information, so you'd better be prepared. It sounds more like an MBA's mad version of a video game, but it is a clever way to keep your interest in the tutorial up and provides incentive for getting it right and not sleeping through it.

While many products shout the slogan, "easy to use yet powerful," *DataEase* can rightfully make this claim. *DataEase* is truly oriented toward the user and goes a long way in providing power and ease of use to those of us who are not database gurus. You simply don't need to have a technical background to create efficient and extensive databases — why, it's so simple to use you don't even need a degree in English. (*DataEase* Version 2.5, Release 3. For IBM PC, XT, AT, PS/2 and most compatibles, Wang Professional, Victor and Burroughs. DataEase International, Inc., 12 Cambridge Dr., Trumbull, CT 06611, 203/374-8000.) ☐

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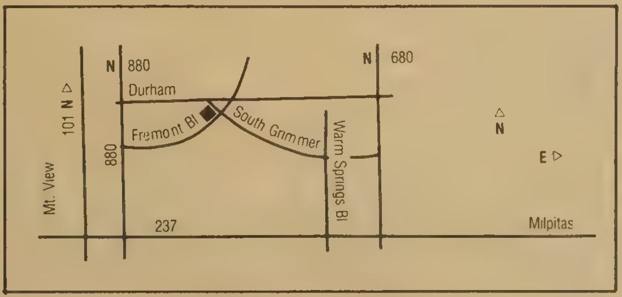
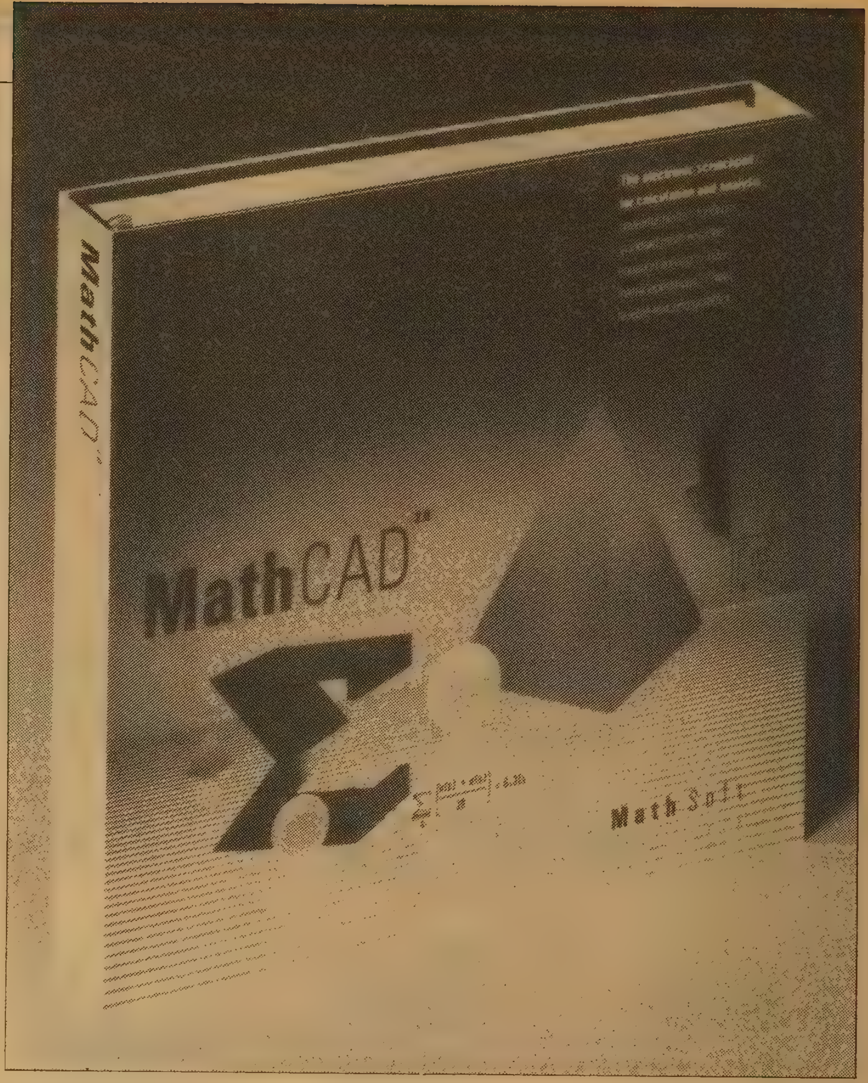


MathCAD, Version 2:

Mathematics Truly At Your Service

By Birrell Walsh



On the occasion of release two of *MathCAD*, it's time to spotlight this extraordinary program. *MathCAD* is a superb tool for the mathematically sophisticated — the engineer and the scientist. It automates much of the dirty work in mathematics. It allows the mathematical worker to produce much more in a day's work.

Curiously, it also helps the mathematically unsophisticated. Because it does the solving, the formatting and the graphing, it facilitates the work of the newcomer. The calculator made arithmetic accessible to people who hate arithmetic. *MathCAD* may do the same for those who never could master algebra.

It will do five things:

- write equations in standard mathematical format, on the screen and on a graphics printer.
- solve equations and functions for you by substituting in values.
- solve equations in the other sense, finding roots, maxima and minima.
- plot your equations in graphs which you can scale to your liking.
- allow all your equations, solutions and plots to be mixed with text. *MathCAD* produces finished documents.

For both the expert and the beginner, it allows mathematics to be done in real time. You write the equation and *MathCAD* solves it for you. Another few keystrokes and the equation is graphed as well. Write notes to yourself on the same screen. The program works just about as fast as you can think — and it lets you think much faster.

Mathematical Symbols

The *MathCAD* screen looks like a traditional page of printed mathematics. If you use computers to do mathematics, you know there are different ways of writing formulas for computers and on paper. Division on paper looks like:

$$\frac{a}{b}$$

while in computer languages it is written "a/b." The product of a and b is written with a dot suspended between the a and the b, while on a computer the dot is replaced with an asterisk: "a*b."

MathCAD does more than replace the computer-language symbols with the traditional mathematical operators. *MathCAD* formats equations. It knows that an integration wants four pieces of information: the two limits, the function to be integrated, and the independent variable. When you type the symbol for integration in *MathCAD* (you type "&" on your keyboard), the traditional "long s" appears. It looks like a script lowercase f, without the cross-bar. *MathCAD* places four black-square placeholders beside the integral symbol on the screen. The lower one and the upper one are for the limits of the integration. In the center is a placeholder for the function you are integrating, followed by another for the independent variable.

MathCAD's placeholders illustrate its many helps and protections for the user. If you fail to fill in all the placeholders in an equation, *MathCAD* will protest and mark the missing information. An explanation will appear on the screen: "Missing operand" or "Not enough constraints." *MathCAD* will also check the consistency of units if you are using them. It will let you know that distance (in feet) divided by time (in seconds) can't equal acceleration (in feet per second squared), because the units don't match.

As you make more and more complex equations, *MathCad* will format them for you. It arranges division so that the divisor is below and the dividend above a horizontal line. It automatically uses brackets to show subsections of the equation. You can override the automatic parentheses to group parts of the equation as you wish. At each step of the way, *MathCad* formats the equation in its latest form.

MathCAD works as comfortably with complex and imaginary numbers as it does with real numbers. It even recognizes that "3, plus 2 times the square root of minus 1" equals "3 + 2i". All the functions which work on real values can also be used on complex and imaginary numbers.

Solving Equations

MathCAD can solve equations as well as format them. If you ask it what is (in mathematical format, of course) "minus 3 plus the square root of 2 times 4 times 15, all divided by 8", it will solve the equation for you. You can define variables with a colon, written by MathCAD as ":=". If you write "velocity := 30", you can use the variable name "velocity" anywhere later in your *MathCAD* document and *MathCAD* will substitute the value "30" for it in its calculations.

The user can define functions in *MathCAD* in the same manner: "speed (distance, time) := distance/time". Your defined function can be used at any point thereafter in the document. Other values can be substituted for distance and time, to obtain a result directly or as part of another equation.

MathCAD comes with sixty-six pre-defined functions. They are trigonometric, hyperbolic, logarithmic and exponential functions. There are statistical functions, six Bessel functions, four cubic splines. There is complex arithmetic. Fast Fourier transforms find repeating cycles in complex as well as real data.

Arrays, vectors and matrices are supported, including matrix multiplication and division, dot and cross products, matrix inversion and transposition, and the discovery of the determinant. Vector and matrix functions can be defined by the user. Full vector and matrix support are new in this version of *MathCAD*, a welcome addition that increases the program's value in engineering applications. You can import and export scalar, vector and matrix data in ASCII files. You can bring in figures from (say) monitoring equipment, process them in *MathCAD*, and export them to a spreadsheet.

If solution by substitution were not enough, *MathCAD* has taken a look at competitors like Borland's *Eureka The Solver*, and included the ability to find roots, maxima and minima.

You can type "Given" in a *MathCAD* document, and then a series of equations and conditions. The latter constitute constraints for the solution: $y > 3$ or $x <= 0$. *MathCAD* will solve for any number of unknowns if you provide enough constraints.

There are limits in this process, though. *MathCAD* uses numerical methods to find its solutions. You must give *MathCAD* a starting guess for the root; it will then find the actual root that is nearest to that guess. *MathCAD* calculates the solution using a method that is the equivalent of sliding along a graph of the function, looking for roots (the value of x when $y = 0$) or other solutions. If the equation you define has undefined points (like "1/x" when $x=0$),

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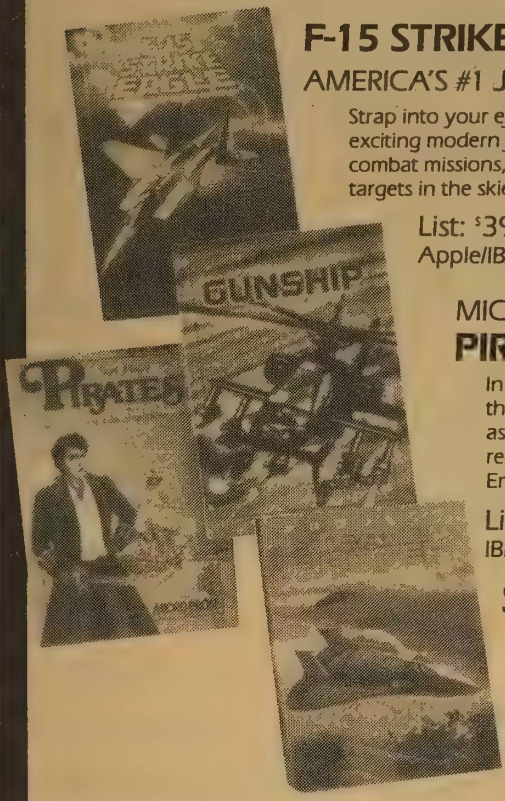

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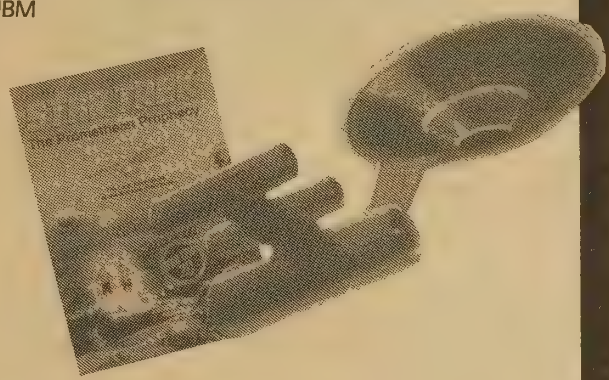

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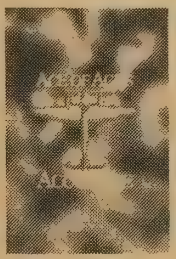

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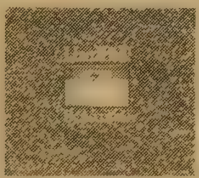

HARDBALL

What do you do next? Steal? Bunt? Sacrifice? Send in a pinch hitter? Your strategy alone determines the outcome. The fielding screen gives you a player's point of view and the Manager's Decision screen gives you ulcers. All you need is the brilliance of a star and the genius of a manager!

Atari List: $29.95
Intouch: $19.45
IBM List: $39.95 **Intouch: $25.95**
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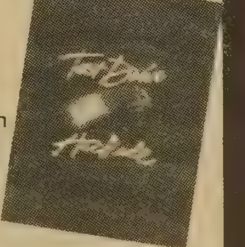
TEST DRIVE



Is your heart strapped in? Good. Hit warp speed in a Ferrari Testarossa, blow the doors off with a Lotus Turbo Esprit, corner until the tires scream in a Porsch 911 Turbo, bring your oil to a boil in a Lamborghini Countach and dust the fuzz in a Corvette. Welcome to the fast lane.

List: $29.95 **Intouch: $19.45**
IBM/Atari/Amiga

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MathCAD will not deal gracefully with it. The "slide along the curve" method can get caught on humps in the curve, where maxima and minima are found. *MathCAD* can help you find solutions if you are familiar with the mathematics involved, but I would not recommend taking *MathCAD's* solutions without looking at a graph of the function's curve yourself. There may be more solutions than *MathCAD* has found. The program may even be unable to get to one which does exist. A new initial guess may get you past the obstructing maximum, minimum, or "singularity." Then *MathCAD* can again be useful as a quick calculator. The fundamental problem is that *MathCAD*

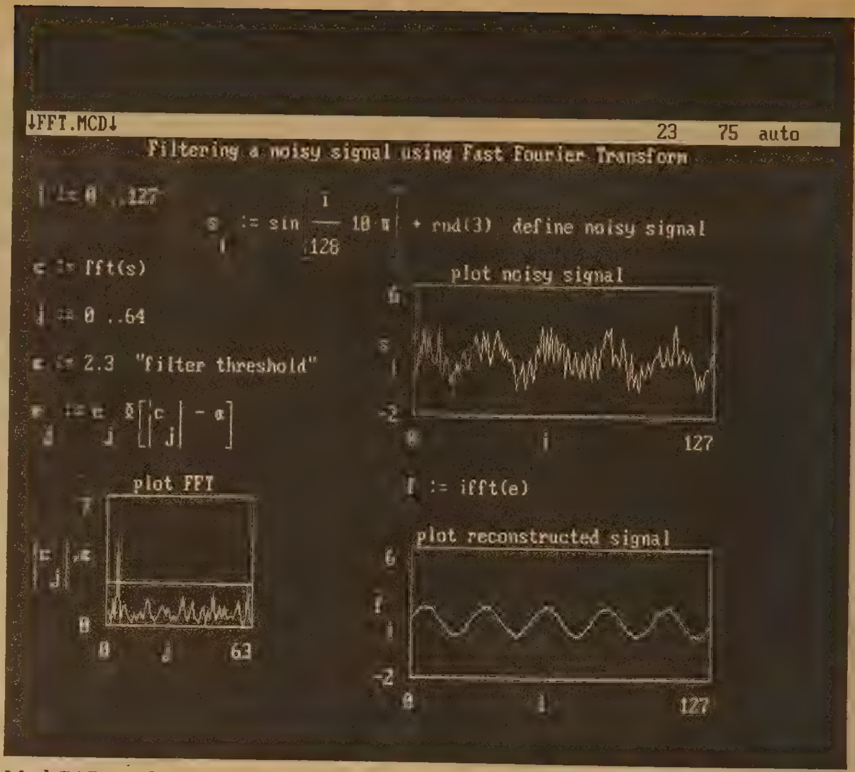
There are limits in this process, though. *MathCAD* uses numerical methods to find its solutions. You must give *MathCAD* a starting guess for the root; it will then find the actual root that is nearest to that guess. *MathCAD* calculates the solution using a method that is the equivalent of sliding along a graph of the function, looking for roots (the value of x when y = 0) or other solutions. If the equation you define has undefined points (like "1/x" when x=0), *MathCAD* will not deal gracefully with it. The "slide along the curve" method can get caught on humps in the curve, where maxima and minima are found. *MathCAD* can help you find solutions if you are familiar with the mathematics involved, but I would not recommend taking *MathCAD's* solutions without looking at a graph of the function's curve yourself. There may be more solutions than *MathCAD* has found. The program may even be unable to get to one which does exist. A new initial guess may get you past the obstructing maximum, minimum, or "singularity." Then *MathCAD* can again be useful as a quick calculator. The fundamental problem is that *MathCAD* uses numerical methods rather than solving the problem symbolically. A human being, or a symbolic program, might be able to reframe the equation to find a solution.

Plotting

The plotting facilities in *MathCAD* are delicious. You can create a graph area with one keystroke. You can change its size, shape, gridding, or scale (linear and logarithmic) with a simple formatting command. You can plot points, lines, or error-bars. All of these choices are made with a few simple commands, and can be changed just as quickly.

You define the variable or function to be found along the x-axis, and the dependent variable or functions to be found along the y-axis. You can set the range to be graphed along each axis; if you do not, *MathCAD* will automatically choose a range that shows all of your points. Then *MathCAD* plots your graph for you. The resulting graphs are professional and clear.

Because you can plot a number of functions at once, using different symbols, you can compare information as well as display it. I recalled from calculus class that the derivative of the sine of x is the cosine of x — one of those things I took on faith. So I made a graph that had x along the baseline, and d(sin(x))/dx and cos(x) plotted. And there it was: the two curves lay atop one another.

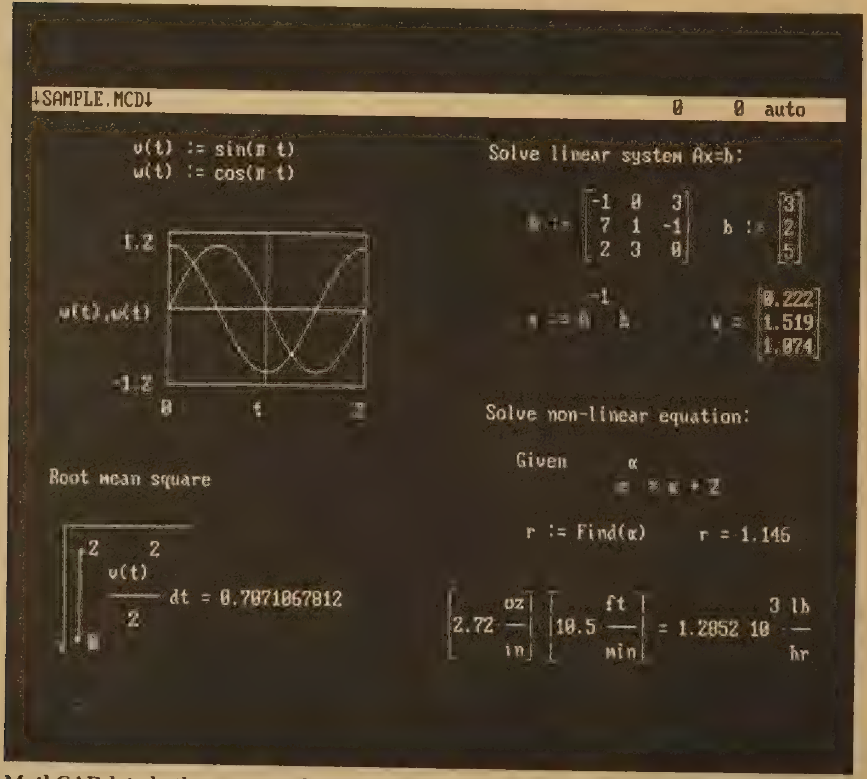


```
↓FFT.MCD↓                                                23    75  auto
            Filtering a noisy signal using Fast Fourier Transform
 i := 0 ..127
                      i
             s  := sin —— 10 π  + rnd(3)  define noisy signal
              i      128
 c := fft(s)
 j := 0 ..64
 α := 2.3  "filter threshold"
 e  := c  Φ[|c | - α]
  j     j    | j|
                                          i := ifft(e)
```

MathCAD used in an electrical engineering operation.

Reporting

The remarkable mathematical and graphic abilities would be useful in themselves, but the program will let you combine them into a finished document. *MathCAD* allows you to include text, in small chunks or extensive "text regions," and provides a fairly complete set of word-processing tools with which to work on your document. What you see on the screen is what you will get on the printed page.



```
↓SAMPLE.MCD↓                                              0    0  auto
      v(t) := sin(π t)                Solve linear system Ax=b:
      w(t) := cos(π t)
                                             [-1  0   3]       [3]
                                         A := [ 7  1  -1]   b := [2]
                                             [ 2  3   0]       [5]
                                                -1             [0.222]
                                          x := A   b       x = [1.519]
                                                               [1.074]

                                      Solve non-linear equation:

                                         Given     α
                                                 e = 3 α + 2
 Root mean square
                                         r := Find(α)     r = 1.146
  ┌────────────
  │ 2     2
  │⌠ v(t)
  │⎮ ──── dt = 0.7071067812    [     oz] [      ft ]               3 lb
  │⌡  2                        [2.72 ——] [10.5 ——— ] = 1.2852 10   ——
 √ 0                           [     in] [      min]                 hr
```

MathCAD lets both expert and neophyte users input and solve complex equations, and will also display the results in graphs.

You can move text, delete it and copy it. You can write at least as well in *MathCAD* as you can on Tandy's venerable Model 100 portable, which reporters carry everywhere with them. You can format the text-regions to any shape you wish, to allow them to serve as commentaries and explanations for equations or graphs. The full mathematical notation is *not* available in the text regions, but you can write "non-calculating equations" by writing an equation and then marking it with a "disabler."

Equations, graphs, and blocks of text each occupy what *MathCAD* calls regions. These regions can be shown outlined with dotted lines on the screen if you wish, though they do not print. The contents of any region can be copied, deleted or pasted to any other place in the document. You can therefore move complex equations, intricate graphs, or extensive text with very few keystrokes.

MathCAD allows you to have two files open at once. The screen splits across the middle into two windows, and you can edit each one separately. You can copy between the windows. You can create library files of frequently used formulas, definitions and graphs. New projects can have these frequent functions pasted into them complete.

With its combination of mathematical magic, plotting, text editing and document formatting, *MathCAD* is an exquisite tool for anyone who must write mathematical and engineering analysis. You can do your rough work using *MathCAD* as an "engineering sketchpad," check your work with imported data from other programs, and produce a final document in the same environment. If you get stuck, the program offers a toll-free support line. You probably will never call them. The documentation is complete and comprehensible, full of examples, well illustrated — and even nicely bound in a lay-flat hard cover.

MathCAD could pay for itself in an hour in any engineering office. It could assist the mathematical beginner as well, by allowing the tyro to see mathematics at work. Applause to the developers! ☐

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MathCAD

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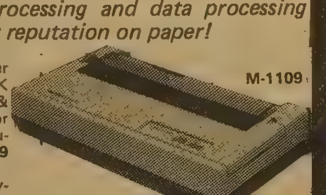
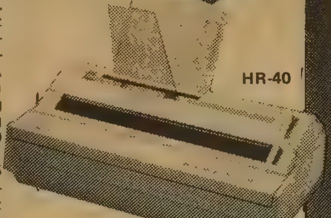


M-1109 — 100cps, 80 column printer with near letter quality mode. 2K buffer. Compact (13"x2.8"x7.6") & lightweight(7.8 lb.) design. Ideal for use with portable or lap-top computers. Complete with tractor . . . $219



NEW! HR-40 — A high speed daisywheel printer that make you look good on paper. 40cps, 136 column. Built in push-type tractor would not waste the first form. Built-in single-sheet feeder makes it the best price-performance daisywheel printer. A unique paper parking feature lets you insert single sheet without removing continuous form. A truly outstanding value at. $689

M-1509
M-1709
M-1724

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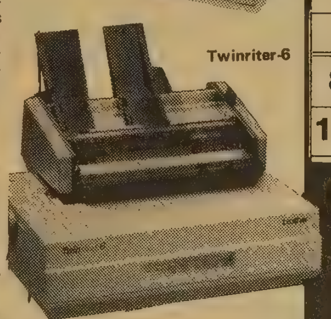

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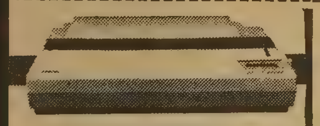

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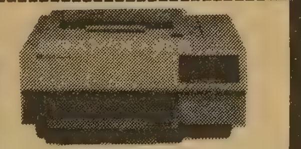

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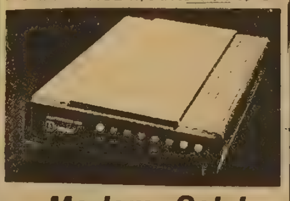

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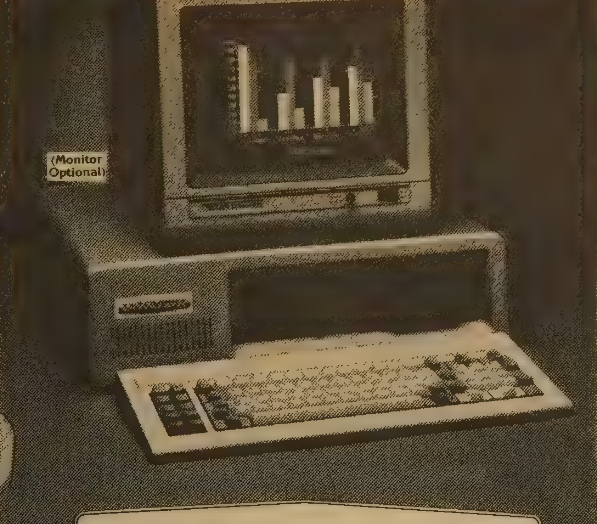

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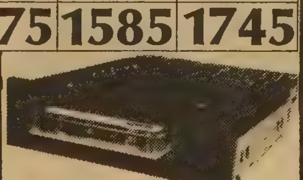

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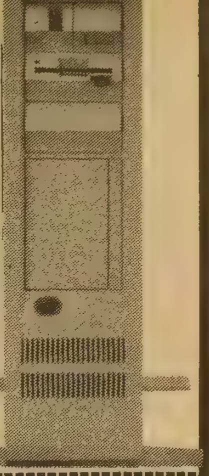

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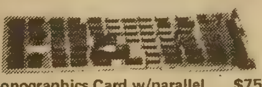

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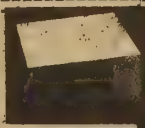

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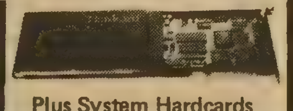

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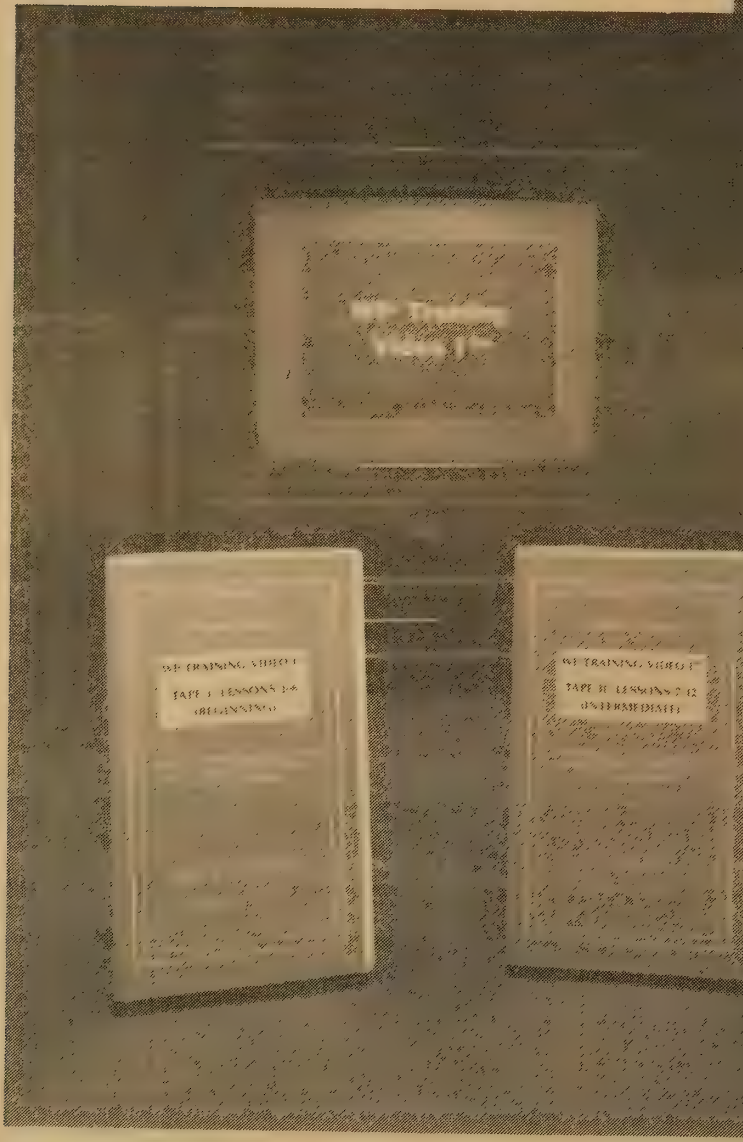
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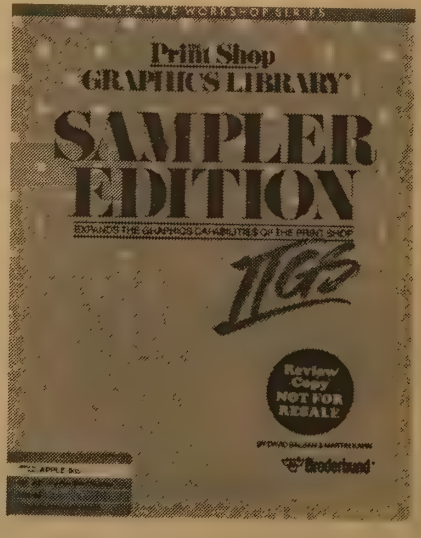
The Print Shop Graphics Library Sampler Edition extends the capabilities of the Apple IIGS version of *The Print Shop*. It has over 180 graphics, borders, fonts and full-panel designs. The design elements take advantage of the Apple IIGS's resolution and color capabilities As its name implies, it is a sampler of clip art ranging from holiday themes to planes, trains and automobiles. The borders encompass art deco to African design. The full panel designs for cards and signs include a stained glass window, a new wave notepad and seasonal themes. Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101. (415) 492-3200.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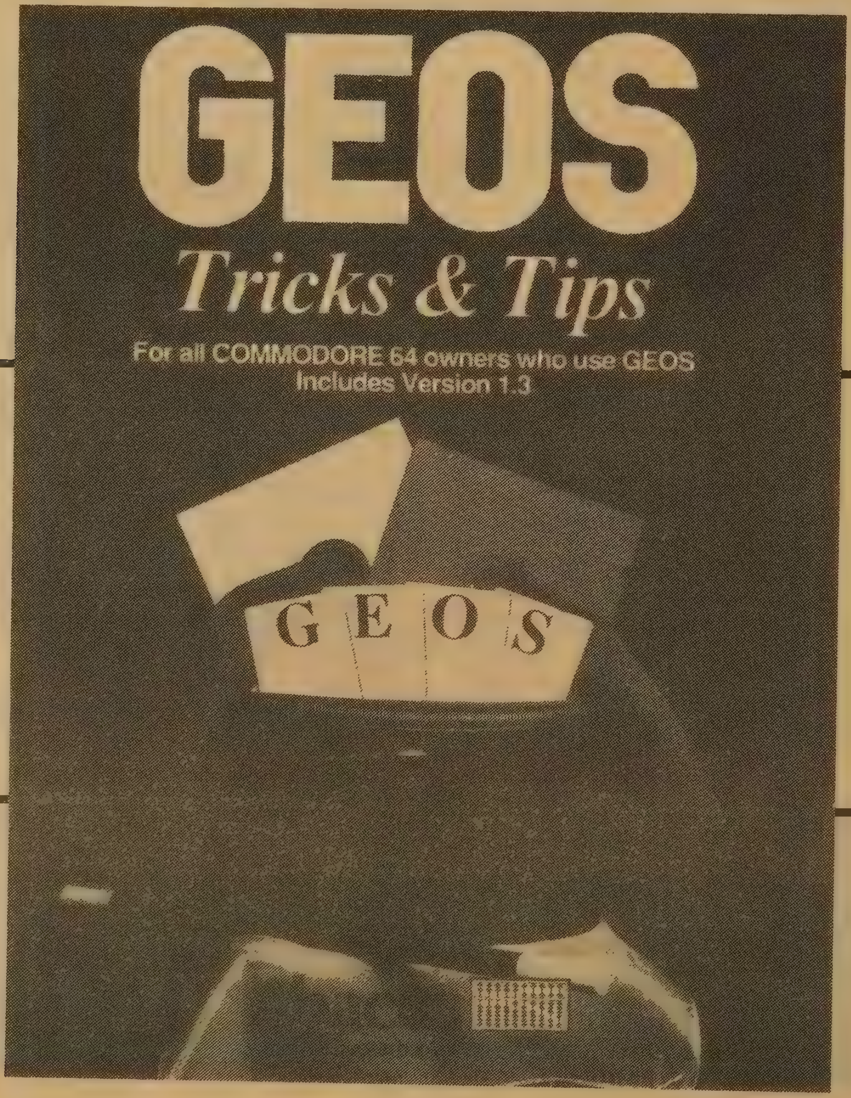
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GEOS Tricks & Tips written by Manfred Tornsdorf and Ruediger Kerkloh, and published by Abacus Software, is a companion to the book *GEOS Inside & Out*. It includes over 50 tricks and tips for users of the popular Commodore operating system, including setting up form letters in *geoWrite*, writing your own error messages, altering the notes icon and moving documents quickly in geoWrite. It also tells you how to modify the GEOS program operation to suit your preferences. An optional program diskette is available for this book that contains all of the programs listed in the book, ready to run and error free. Abacus Software, P.O. Box 7219, Grand Rapids, MI 4951. (616) 241-5510.

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What's Happening?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

Reviews *continued from page 52*

Every word presented by the program is pronounced in a clear female voice. *Reader Rabbit* also speaks a few phrases in a cartoon voice. In a classroom environment it would be best to use the program with earphones for a student working alone, or with external speakers for a small group.

The only criticism I would offer is that the program does not use the mouse, which is a natural way to point and select. The success of very young learners with the Macintosh suggests that the Mouse interface is perfectly appropriate for this age group. Using the arrow keys is a distraction from the screen, at least for me. It would have been helpful if the program could accept the user's name as text input and use it in phrases of encouragement or reinforcement. Reasonably good text-to-speech software exists, but using it in an application program makes heavy demands on memory.

The program is based on solid theoretical principles. The earlier (non-talking) versions have been well-regarded by teachers. Any elementary school fortunate enough to possess an Apple IIGS should obtain a copy of talking *Reader Rabbit*. (The Learning Company, 545 Middlefield Road, Menlo Park, CA 94025. (800) 852-2256.)

Geology In Action

Experiments And Puzzles

By: *Stephan Cohen and Alexander Goldowsky*
Published by: *HRM (1987)*
For: *Apple II series (48K)*
List Price: *$69*
Reviewed by: *Mike Markowitz*

Landscapes are puzzles and geologists delight in figuring them out. *Geology In Action* is a simple, highly visual tool for exploring the forces that shape the world. Designed for teachers of Earth Science at any level from grades 6 to 12, the program is highly flexible. It can be used individually or with a group; as a tutorial by itself, or as an animated video blackboard to support a lesson plan.

You start with a flat slab of bedrock seen in cross-seciton. You can lay down thick or thin strata of sedimentary rock, erupt volcanoes, erode valleys, unleash faulting or folding, and generally play the role of Creator. Everything is done from a series of menus, using the arrow keys, spacebar and Return key. There is no particular scale of miles, or years here. The emphasis is on the process.

A skillfully animated tutorial introduces most of the basic concepts. You can experiment on your own, or pull up one of ten "puzzles" from a separate data disk. The puzzle shows a cross-sectional landscape in a window, and the challenge is to duplicate the pattern by laying down and transforming different kinds of rock.

The program does not require a color monitor, since it uses distinctive patterns for each type of rock. Full-page Hardcopy printouts can be produced on either the ImageWriter or any Grappler-compatible parallel printer interface.

Written in Pascal, *Geology In Action* is copy-protected. It supports a second disk drive if you have one. The data disk can be copied, and backup copies of both disks are included in the package.

A concise 26-page Teaching Guide in a 3-hole vinyl binder provides adequate documentation, considering how easy the program is to learn and use. A Glossary gives an explanation for every geological term used in the program.

Any elementary Geology or Earth Science course with access to an Apple II series computer could use this program to good advantage. (HRM Software, 175 Tompkins Avenue, Pleasantville, NY 10570. (800) 431-2050.)

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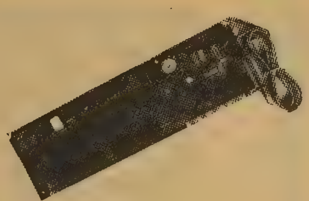

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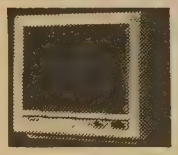

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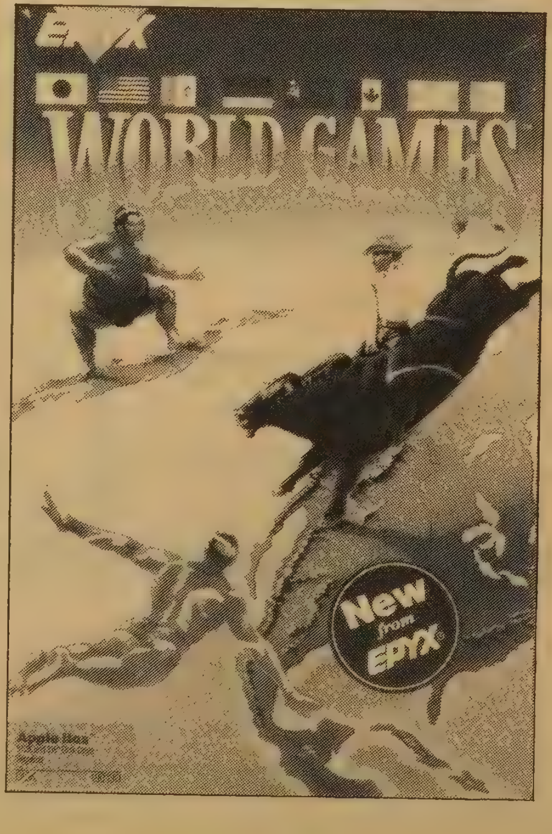

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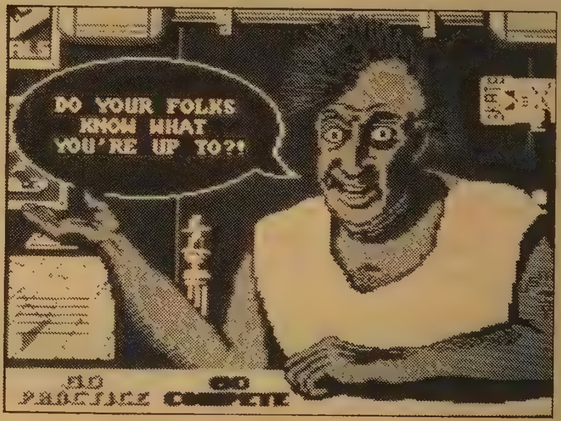

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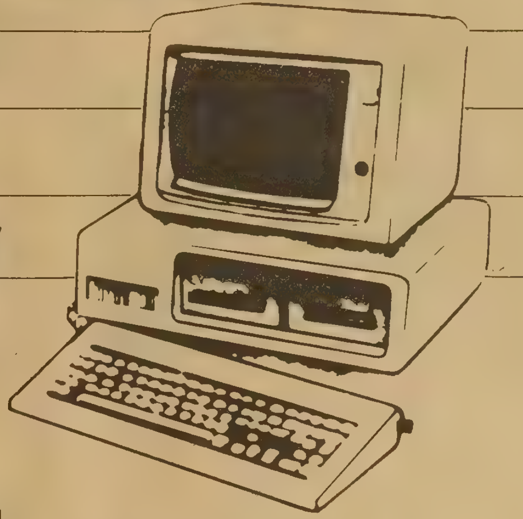

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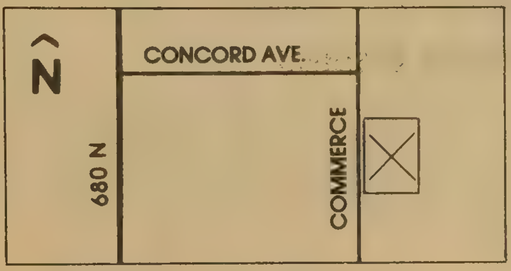

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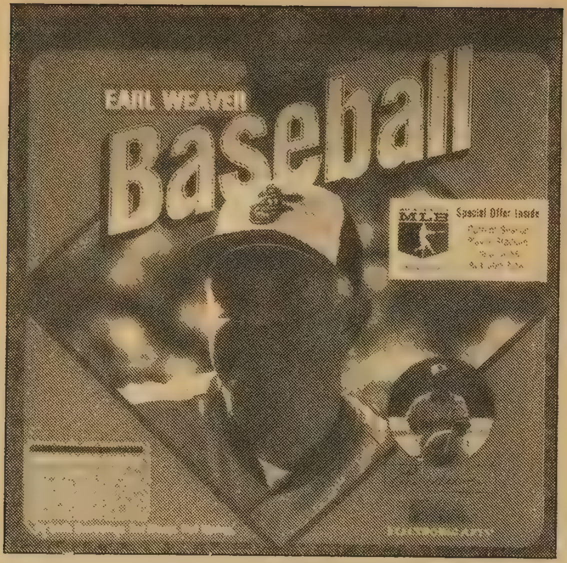

determining the pitches to deciding whether to try a squeeze play. It also lets you create lineups and track a player's progress throughout the course of the season. You can construct teams that include players such as Babe Ruth, Sandy Koufax and Harmon Killebrew. You can play in any number of parks including Fenway, Yankee stadium and even the old San Francisco Seals' park. The game covers levels from street and minor league to major league play. At any point you can ask the famed Baltimore Orioles manager's advice. ($49.95) For the Amiga and IBM compatibles. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404 (415) 571-7171.

Dirk The Daring Returns In Dragon's Lair For The C64/128

The popular arcade game *Dragon's Lair* is now available for the Commodore 64 and 128. In this game, however, once you kill Singe the dragon (good luck) who's holding the beautiful Daphne hostage, you must escape the castle and face the Lizard King. You try to steal his treasure, thus insuring a lifetime of happiness with Daphne, while he tries to kill you. Your favorite arcade adventures are recreated as you swing on ropes across fiery chasms, roar through rapids and swirling whirlpools and ride the phantom horse. All leading of course to that meeting of destiny with Singe. ($24.95) Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

DRAGON'S LAIR

Micro Mah Jongg Is The Newest Incarnation Of The Ancient Game

Maj Jongg has a long history going back 2,000 years. In its wake it has left uncounted numbers of players hopelessly addicted to the game with the clicking ivory tiles. This newest version called *Micro Mah Jongg* from Delta Soft offers vivid color graphics that re-creates the ancient game of merchants and emperors. You play against three independent players individually monitored by the computer and point calculation is exactly like real-life Mah Jongg. You can perform, "Seungs," "Pungs," "Gongs" and other game strategies. You can also use *Micro Mah Jongg* as an on-line teaching tool. Delta Soft. P.O. Box 1993, San Jose, CA 95109.

MICRO MAH JONGG™

The Fox Returns In SkyFox II: The Cygnus Conflict

The SkyFox is the fastest ship in space and the only one that can defeat the Federation's enemies and save the galaxy. In *SkyFox II: The Cygnus Conflict* you pilot the ship that has become a legend. In this game you blast through asteroids at 9000 kilometers/second and destroy enemy Xenomorph fighters with Photon Pulse Bombs or Neutron Disruptors. When you're damaged, as you most certainly will be, run back to the nearest starbase for repairs. Then set your course, hit the autopilot to reach your destination deep in enemy territory and start blasting. For the Commodore 64. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

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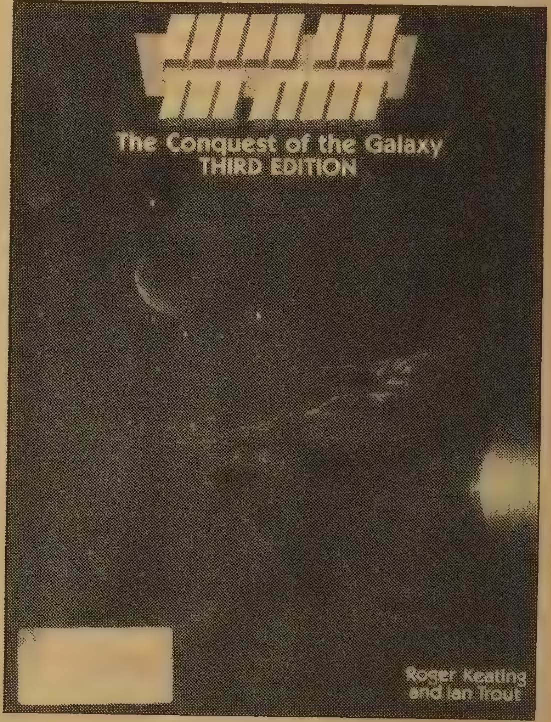

Reach For The Stars Now Available For The Mac

Reach For The Stars, from the Strategic Studies Group and distributed by Electronic Arts, is a game of galactic colonization and conquest now available for the Macintosh. Starting with a single colony, up to four players carve out their own interstellar empires. To win a player must manage the economy as well the military. With the Macintosh version come new rules that emphasize long term planning. *Reach For The Stars* will also run in color on the Mac II. ($44.95) For the Macintosh, Commodore and Apple II computers. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404. (415) 571-7171.

Learn Blackjack From A Professional

Championship Blackjack from PC Software was written by Joseph Juhasz, who spent three years researching this program and consequently was kicked out of casinos on both sides of the Atlantic. *Championship Blackjack* teaches beginners the basics of the game and more advanced players the techniques casino owners hate. You can select the casino rules

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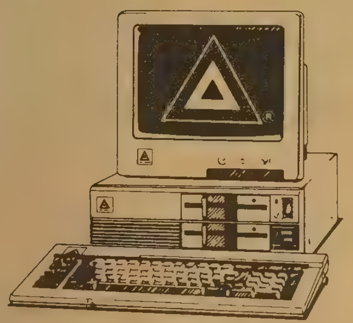

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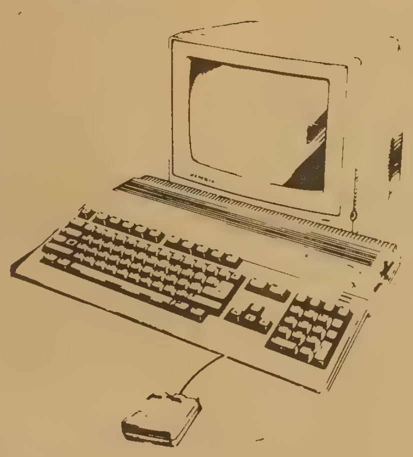

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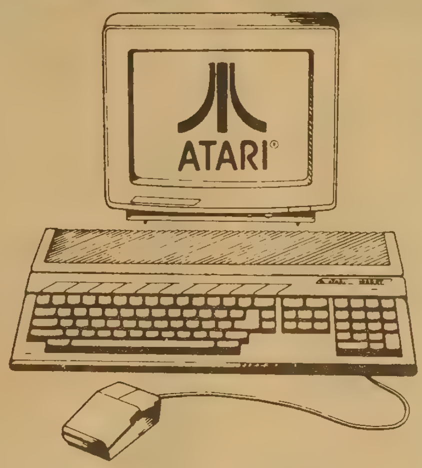

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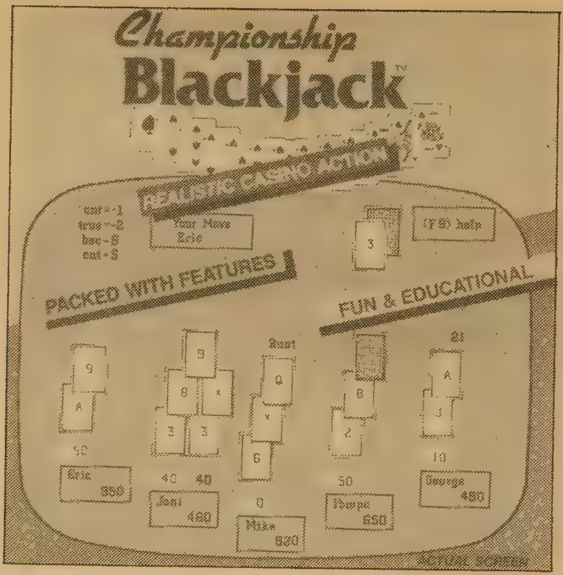
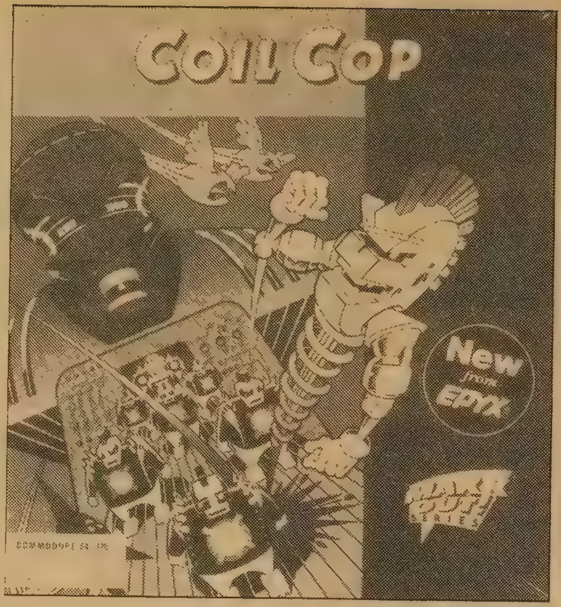


you wish to be in effect and play double exposure where you see the dealer's cards. *Championship Blackjack* acts like a tutor by announcing playing mistakes, suggesting correct plays and including numerous help screens and a 21 page user manual. ($34.95) For The IBM PC and compatibles. PC Software 11627 Calamar Court, San Diego, CA 92124. (619) 571-0981.

In A Toy Factory Gone Mad You're The Coil Cop

Just in time for the holiday season, *Coil Cop* from Epyx is a game set in a toy factory that has been taken over by a master computer gone haywire. The Coil Cop is the last remaining plaything to survive the clutches of the evil computer



that is now creating such creatures as the Orblet without legs, Hatchettes and Gerald the oil sucking gremlin. To stop them you have to bounce on your coil through an array of tunnels and rooms until you find the equipment you need to shut down the factory. ($24.95) For Commodore 64. Epyx, 600 Galveston Drive, P.O. Box 8020 Redwood City, CA 94063. (415) 366-0606.

Japanese Favorite Soko-Ban Now For IBM

Soko-Ban is Japanese for warehouseman. In this game you control the movements of a Soko-Ban as he moves boxes to pre-assigned storage

Soko-Ban
A Strategy Maze Game
IBM PC XT AT 256K
Spectrum HoloByte

areas of a maze-like warehouse floor. You're challenged to solve each level in the shortest amount of time with a minimum number of moves to get the best possible score. You must carefully plan in advance because one wrong move could make it impossible to complete a level. *Soko-Ban* also lets you design your own mazes. In the tournament game up to four players can compete. *Soko-Ban* has been a big hit with all ages in Japan and is now available for IBM and compatible computers. ($29.95) Spectrum HoloByte, 2061 Challenger Drive, Alameda, CA 94501. (415) 522-3584.

電腦麻將

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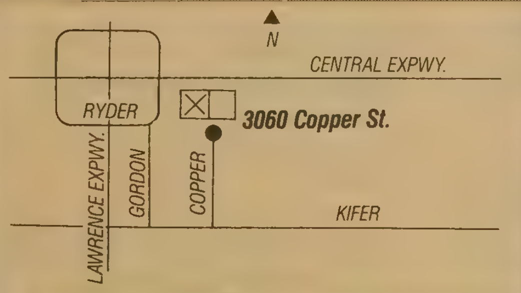

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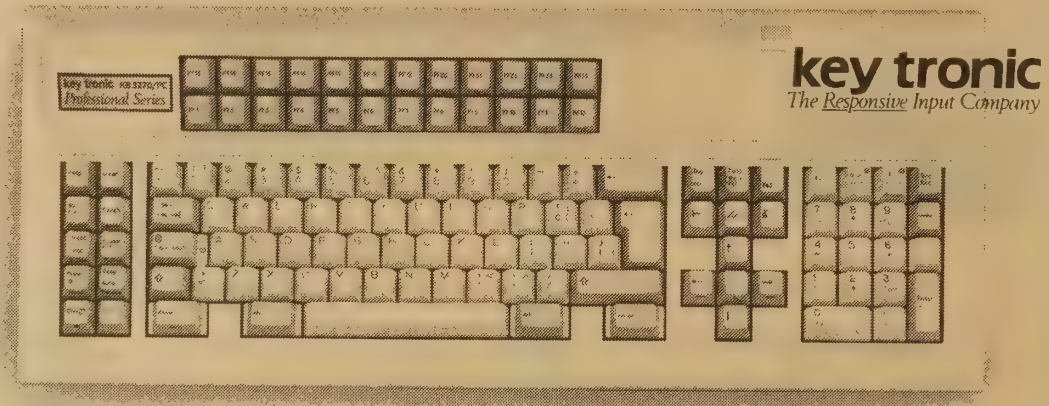

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John Sculley *continued from page 62*

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Is the publication of your book and Mr. Gassee's book in the same year part of a campaign to acquire mindshare in the outside world? It seems like what both books are doing, in large measure, is explaining the ideas behind the machines, the why rather than the what.

Yeah. See, I think we have to remember that we're coming up on a presidential election year in 1988, and my sense is that we can't even talk about issues until after the nominating process. No one will get nominated by the Democrats without taking a very far-left position that will meet a lot of special-interest groups, no one will get nominated by the Republicans without taking a far-right position that will meet a number of special interest groups, and yet we know that in the final campaign both candidates will have to come to a more centrist position in order to get elected.

And at that point, since California has really no role in the primary states for the nomination process, we suddenly become very important as a state in terms of who's going to get elected, and the chances are it'll be a close election. So I think there is a real opportunity to capture national attention on the issue of education in the 1988 presidential campaign, after the candidates have been nominated. My sense is that all the candidates will have very positive things to say about education, and I think they'll be essentially hollow answers.

So that's why I think it's time to speak out now and find out how much grass-roots support there really is for education. I think there's extraordinary support for it, because people really do understand, even if our politicians don't — the people understand, the educators understand it, the teachers understand it, the students understand it, it's amazing that it can't be understood

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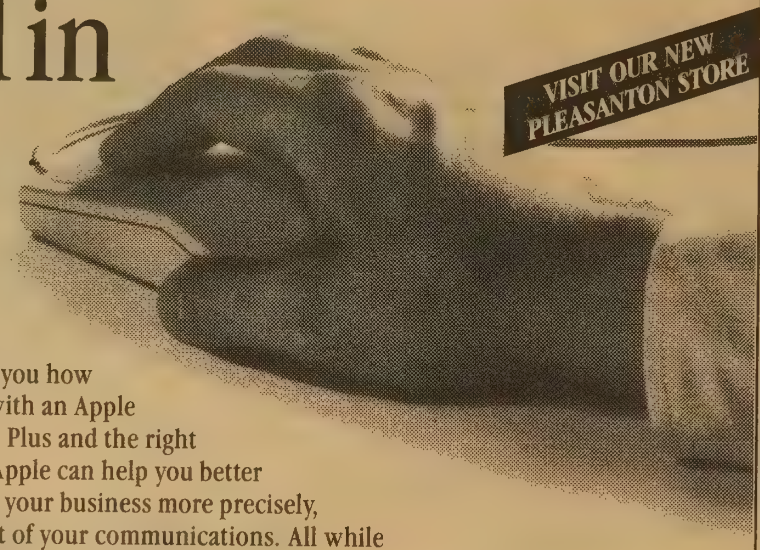

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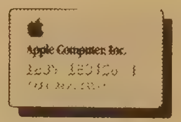

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in better ways by people higher up in government.

My sense is that my book and others are going to help galvanize a lot of attention to these issues, and what we need to do in the coming months is to get those people who care lot about education to start to articulate, in ways that the broad population will be able to understand, that there really are choices, we don't have to sit back and watch our education system go into the drink.

Does your ACOT [Apple Classroom Of Tomorrow] experience funnel into this?

ACOT helps, but it's not the total answer. The ACOT experience is that we've taken Apple II computers and put them in the classroom so that almost all the students can have one available to them, and then give them access to an Apple IIc at home. There have been remarkable changes, not only in their behavior but also in their test scores.

But that isn't the total answer. The real answer comes when we can get more and more curriculum-based software, get the computer out of the computer labs, stop teaching computer literacy, and start integrating the computer as a basic learning tool that will let individuals work separate from the regular classroom routine, or even get it integrated into the classroom routine where groups of students are working on common projects. We've just barely scratched the surface in terms of the real impact that the computer can have in education.

My big interest is to make sure that it doesn't become the device which frees some of us but then leaves a lot of us on the outside, and that's one of the risks in the urban areas, because the number of computers in urban schools is discouragingly low. And even the ones that have gotten in there aren't being well utilized because nobody knows what to do with them.

That's why we have got to get some help from government leaders to say this is a national priority. It seems to me that this country has always had the right leadership at the right point in time — we had the Marshall Plan, we had to reestablish the strength of Europe, which meant a free world back in 1948. We had the highway system put in when we had to have a highway system put in, which opened up tremendous commerce for the United States in the 1950s and 1960s. We had the NASA program to the moon, which gave us tremendous technology throughout the 1970s. But more recently we haven't had the major investment in the infrastructure of our country that we're going to have to have as we cross over to the 21st century. Probably the biggest investment is the investment in our education system. This is the right moment for a leader, regardless of which party that leader's from, it's not important, to say "what can I do for the education system?"

My sense is that 100 years from now the people in this country or in the state of California will look back to the late 1980s, and they won't remember what the INF agreement was, taking 3% of the nuclear firepower in the world and disbanding it, or they won't even care that we had a tax reform in 1986. What they *will* say is did we, or did we not, do anything about our public education system. Hopefully, they'll say that we seized the moment and took the steps to start to revolutionize it, and that we got some more intelligent people into government, and people who didn't go into government who cared about those issues and started to work together to galvanize a lot of support across the country.

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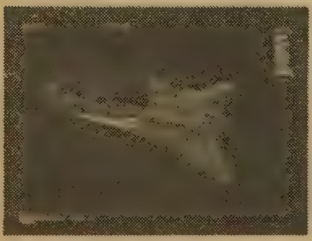

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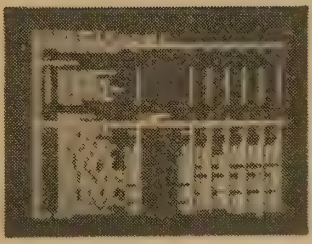

132×43 text with Lotus 1-2-3

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My big interest is to make sure that the computer doesn't become the device which frees some of us but then leaves a lot of us on the outside.

It's an extraordinary opportunity, not just for Apple but for the whole world, because Macintosh has become a part of many people's college education. What it means is that, after they graduate — and in June of '88 we'll have the first class that will have had Macintosh through all four years of college — when they go out into the world, regardless of what they're going to do, many of them go out with a genuine love affair with their computer. So it isn't as though it's some machine they have to use just to get by. It's a tool which they think gives them an extraordinary advantage over others around them.

The more and more people that go out in the world, regardless of where they end up, with that feeling that they have an extraordinary tool to work with — they're bound to come up with better ways of doing things.

As we've made this transition from the industrial age to the information age, what we've learned is that the old ways of doing things just aren't as effective any more. So if we can get a refocus back on the individual, and say that we can offset the overspecialization, the overinstitutionalization, that we were left with at the end of the industrial age, and give individuals the tools to go out and do things in better ways, my sense is we'll start to not only be more competitive, in a global economy, but we'll also be able to show real productivity gains. So those Macintoshes which have been on campuses for the last four years — it's sort of like the invasion of the aliens.

The pods are coming...
The pods are coming. (laughs)

Where would you like to see Apple in 1997?

I would hope that by 1997 that we will be well on our way towards creating a product like the Knowledge Navigator that I describe in my book. Most of the technologies are already incubating in the universities or labs, some in Apple's own lab. I think this would be an extraordinary product, because it would have the potential of maybe changing the world as much as the printing press changed the world back in the Renaissance. It's got its roots in things that are already present in the Macintosh, and it's got its roots in other things which we aren't doing yet.

But my sense is that, timing in life being everything, that once again, just in 1977 the timing was right to start the personal computer industry, in the late 1990s the timing will be right to make a dramatic impact on the world, with individual tools that are even more remarkable than the ones we have today. And I would hope that Apple is still the leader and the innovator in terms of shaping what that world might be. □

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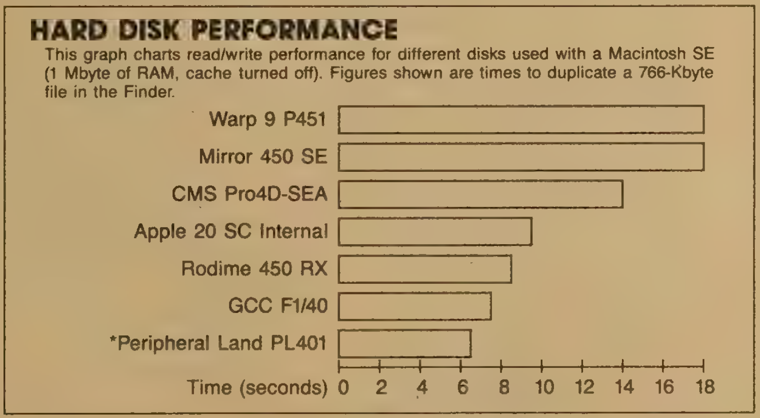
MacWEEK produced this chart demonstrating how Peripheral Land beat out every other manufacturer:



HARD DISK PERFORMANCE

This graph charts read/write performance for different disks used with a Macintosh SE (1 Mbyte of RAM, cache turned off). Figures shown are times to duplicate a 766-Kbyte file in the Finder.

*The PL40i has been replaced by the PL50i since publication. The new drive is even faster!

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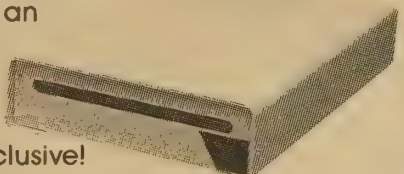

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VOPT and VFEATURE:

Good News For Hard Disk Users

By Woody Liswood

As high-capacity hard disks become not only affordable but a virtual necessity of life to the average microcomputer user, a new crop of problems arises — some having to do with the limitations of DOS, and some having to do with the performance of the drives themselves. Two products from San Diego-based Golden Bow Systems, however, can help minimize these problems and insure trouble-free operation.

VFEATURE: Beating The Limitations Of DOS

DOS, as you may recall, has two limitations which affect the intelligent use of a hard disk. First: DOS cannot work with any disk which is larger than 32 megabytes. Second: although DOS will allow more than one partition on a disk, only one of them can be a DOS partition.

Among its other features, *VFEATURE* solves both of those problems. It is a device driver which works with your specific disk controller to allow DOS to use volumes up to one gigabyte. It will also allow more than a single DOS partition on a hard drive. It will also cause multiple hard disks to behave as if they were a single disk.

I tested *VFEATURE* in two situations. First, I had a 72 MB drive attached to a Wang 386 PC using MS-DOS 3.2. The installation is rather simple. You first format a floppy drive with your current DOS version, and transfer your config.sys file and any other device drivers you normally load onto that disk. Next you run a program which comes with *VFEATURE* called MAK__VDSK, and the program will load a selected set of *VFEATURE* files into memory. It then prompts you through a transfer of those files onto that floppy. Next you run a program, from the newly created floppy called VOL__DEF. This program gives you a few moments of lecture about not copying the *VFEATURE* disk and using it on more than a single computer, then brings up a menu with the *VFEATURE* options.

The first time VOL__DEF runs, it asks you to verify the number of drives and their physical parameters, such as number of cylinders. If you have it, you can enter in any defective track information and perform a low-level format of the disk.

The next step is to assign the number of disk volumes you wish. *VFEATURE* allows up to twelve disk volumes to be assigned to a single physical drive. You must also specify how many sectors should make up a single DOS cluster. Choices are one, two, three, eight, or 16 clusters.

If you have multitudes of small files, a smaller cluster size is recommended. Just remember that a smaller cluster size will cause some degradation of performance, since DOS will need to take longer to read the FAT. *VFEATURE* also includes its own version of CHKDSK, so that if you assign a volume with over 16,000 clusters (where DOS fails) you can replace the DOS version with the *VFEATURE* version. The *VFEATURE* CHKDSK will handle volumes with up to 32,500 clusters.

VFEATURE will allow you to modify volume security. Among other things, *VFEATURE* will write protect a volume so that it can be read but not written to. *VFEATURE* also will allow password protection of non-DOS disk volumes.

To see if *VFEATURE* really could combine multiple hard disks into a virtual single drive, I used a no-name clone with a PCSG Breakthrough 286 board running at 12 MHz and with MS-DOS 3.2 and two Syquest 15 MB cartridge drives. Following only the menu prompts, *VFEATURE* now treats both of the cartridges as a single 30 MB cartridge.

When you exit *VFEATURE*, it transfers the device drivers and system files from the floppy drive to the hard disk. Now, for the only problem with the program: You must then insert the original *VFEATURE* disk into drive A to get the appropriate installation of the device driver. It is a form of copy protection, since the original disk is "locked" to the particular drive and controller. If a problem develops after use, and you redo anything using the VOL__DEF program, when exiting you are asked if you wish to reinstall these *VFEATURE* files; each time you choose to reinstall, you must again supply the original system disk to drive A for installation.

> **VOPT is a handy utility program which has an unusually pragmatic way of optimizing your disk, moving only those files which are fragmented, rather than rearranging everything to some preset philosophical position.**

Although *VFEATURE*'s documentation implies that the original disk is locked to a particular drive-controller combination, I found that I could use the same original with two different Wang PCs with the same size hard drives, and I could format and use pairs of cartridges as if they were single 30 MB cartridges.

All in all, *VFEATURE* is a useful and interesting utility. It solves one of the major problems with DOS. In about three months of constant use, I have not found any anomalies or had any crashes which might be attributed to *VFEATURE*.

VOPT: Optimizing Your Disk

There has been plenty of talk about the benefits and pitfalls of disk optimizer programs. There are a number now on the market, all of which claim to make you disk appear to run faster. What happens is that DOS, when writing to the disk, uses the next available space. If you use multiple programs, each of which keeps backups as you erase and reuse the space on the disk, your large disk files may become scattered over many parts of the disk. The optimizer programs reorganize the disk so that all of the files are in contiguous sectors, so that DOS does not have to move the drive head around when reading the files.

If you have large files which you write to continually during an application, you will notice some increase in speed from these programs. But, if you most typically use programs which work with data only in memory, such as a spreadsheet, you will notice little, if any, increase in apparent speed of the program.

One little-recognized result of disk reorganization is that if you accidentally erase the file after optimization, it is easier to recover since all its component pieces follow one another on the disk.

There are a number of disk optimizer programs on the market. I have used three of them, *DS Optimizer*, *Speed Disk* which comes with *Norton Utilities* and *VOPT* from Golden Bow. They all do the same thing, they all appear to work; however, *VOPT* has taken a much different approach to the philosophy of reorganization than have the others.

Let me give you an example. I use Syquest 15 MB hard drive cartridges. To test the programs, I made duplicate copies of a badly fragmented disk which had been in continuous

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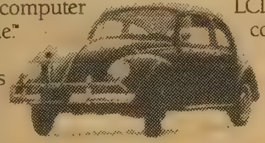

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40961 Grimmer Blvd., Fremont, CA 94538 (across from Tri-City Sports) **(415) 490-0685** use for over one year. *Speed Disk* took over 32 minutes to reorganize the disk. *VOPT* took somewhat over 2 1/2 minutes to do the same thing.

The difference is that *VOPT* looks at the available disk space and does not move files which are already in correct order and have no fragmentation. It fills in with files which can fit in the lower spaces, but does not redo all files, only those which are not contiguous. The other optimizer programs make assumptions that certain directory files should be at the beginning of the disk, followed by program files, and that the outer reaches of the disk should be where the data files are located.

I personally can not tell any difference in reaction time between the drive formatted by *VOPT* and the one by *Speed Disk*.

The conflict can get quite interesting. After I had optimized that cartridge with *VOPT*, I set *Speed Disk* lose on it. 18 minutes later it told me that it had reorganized the disk. Well, next I gave *VOPT* another try. Two minutes later it told me that it had reorganized the disk. *Speed Disk* then took *another* 18 minutes to put everything the way *it* wanted. This went on for three iterations, at which point I finally gave up and decided that I was never going to get an optimization which both programs agreed was correct.

VOPT, like other optimizer programs, will not move hidden files even if they are fragmented. By not moving any of these hidden files you will be able to avoid the problem of copy protection schemes which drop hidden files all over the disk, causing it to burp when run. However, almost all the optimizer programs recommend that you un-install any of those type of programs, then do the optimization, then reinstall. Another blow against copy protection.

As *VOPT* runs, it shows a graphic display of how it is moving files and doing the reorganization. It will also automatically delete lost cluster chains (which can be salvaged prior to optimization with the CHKDSK program), and will also map out clusters which are found to be damaged or unreadable.

In addition to the *VOPT* program, there are a number of programs which you get when you purchase *VOPT*. There is a menu program called *VOPTDEMO* which allows you access to the programs, if you dont't want to run them directly from DOS.

VMAP.COM creates a graphic map to show how the disk is currently being utilized.

VBENCH.COM performs benchmark testing of the system. It performs a number of tests and displays them graphically against a 6 MHz AT. It performs the following tests: Integer Multiplication, Integer Division, Program Loop, String Moves, Program Calls, Video Display (baseline is a monochrome adapter), DOS function calls (baseline is DOS 3.2), Disk Rotation speed, Sequential Disk Reads, Random Disk Reads, Math coprocessor Addition, and Math coprocessor multiplication.

MARKBAD.COM will scan the disk looking for unmarked bad clusters. If it finds any it will tell you, then mark them as non-usable in the file allocation table.

VPRTSC.COM is a TSR program which speeds up print screen operations. The documentation says that it "eliminates annoying delays when you are printing multiple pages in this manner." I tried it but could not find any apparent differences in using it and not using it on my 386-based machine.

VRD.COM checks formatted disks for defects which affect readability and reliability. According to the documentation, it does a more "rigorous" scan than does the DOS FORMAT program. Again, I could find no problems with it that had not already been found by DOS. I tried it against 20 floppies which I had lying around and it told me that all were OK.

VSEEK.COM is an interesting program which provides a graphic display of the seek times over the full range of cylinders on the hard drive. One would expect that the curve rises normally as the distance from the center to the outside of the platter increases. If there are any glitches, it should be apparent from the display and you might do a full backup and then take your disk in for treatment.

VSPEED.COM checks the timing on the floppy disk drives. It shows a graphic display of both disk drive speed and sector spacing. Let me quote the documentation as to why and what you could do since it says it the same as I would:

"Suppose the diskette was formatted on a drive running exactly at specification, but that data is written on a second drive which is 1% slow. A sector of data will take 1% more space than normal, and the inter-sector gap will be reduced by about 6%, decreasing data reliability. In the 'worst' case, within specification, a diskette formatted on a drive which is 1.5% fast and written on a drive which is 1.5% slow, the gap size is reduced by about 18%, a serious change. You might wish to have your drives aligned!"

VTSR.COM tells you what TSR programs you have resident, how much memory each is using and what the interrupts are that they are using.

VOPT is a handy utility program which has an unusually pragmatic way of optimizing your disk, moving only those files which are fragmented, rather than rearranging everything to some preset philosophical position. The "extra" utility programs which come with *VOPT* are also useful and interesting. (*VOPT*. Golden Bow Systems. P.O. Box 3039. San Diego, CA 92103. (619) 298-9349.) ☐

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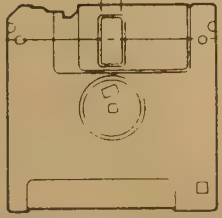

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COMDEX Report:

Software Trends For '88

By Ken Milburn

Las Vegas is the land of perennial sunshine and neon. It is also the annual scene of the world's largest and most important microcomputer show, COMDEX. Outside, the sun was ducking in and out of clouds that shed buckets of rain, turning the streets into un-navigable rivers. Inside COMDEX, the sun was shining everywhere. It was the biggest ever — 105,000 attendees, by the most optimistic estimates. All those bodies made it tough to get from one of the 1,700 exhibits to another. And even tougher to see anything when you got there.

This column is one reporter's take on which newly-announced PC applications are most likely to set the direction of new software developments for the next 12 months. Keep in mind that none of the products in this report have been tested. Products are reported on here for their promise, not their performance — what they may mean to you and your plans for enhancing the automation of your office in the future.

A little background discussion of significant recent hardware and operating system developments, before telling you about the new software, will help put things in perspective. These will be the platforms for even more sophisticated applications than those profiled below. Remember that developments in one category propel further development in another.

Processor Evolution

The 1986 Winter COMDEX marked the year of the 386, a chip that promised a revolution. The 1987 show was one of evolution, although this was rumored to be the year the IBM PS/2 Micro Channel began to appear in non-IBM machines. MCA (Micro Channel Architecture) promises a revolution by (among other things) making it possible to support more than one main processor at a time on the same computer. Alas, not a single MCA motherboard or computer or chipset was officially announced at the show. For months, we had been reading and hearing that the major R&D companies like Chips & Technologies and Phoenix Technologies would offer chip sets for Micro Channel clones. At the show, those companies were admitting that copying the MCA is more problematical than they'd at first thought. They are unanimous in saying that it will be at least 12 to 18 months before any product based on such a chipset becomes practical.

Meanwhile, back at the Houston ranch, Compaq has been saying that the Micro Channel was unlikely to become an accepted standard. Now Compaq's president is admitting that they are working on producing an MCA clone "for insurance." Concurrently, IBM says they expect the MCA to be copied — but not with any help from them.

It turns out that Micro Channel Architecture may be more important than some of us at first thought. Why? Because when the OS/2 Extended Edition and multiple-processor add-in boards for the PS/2 series hit the market, the AT bus hits the wall — neither of these significant products will work with it. Microsoft and 3Com (the big networking company) are working on their own version of an Extended Edition that will run on generic AT and 386 clones. So the functionality of OS/2 EE's networking talents may become available on non-MCA machines. Furthermore, Compaq and AST's extensions to the standard AT bus are capable of supporting their own multiple-processor boards. Compaq plans to keep its system proprietary. AST has offered a set of blueprints to any other manufacturer who cares to use them — an obvious attempt to set a second standard that maintains compatibility with present peripherals for the PC.

Beating The 640K Limitation

If you've ever tried to load *Windows*, *SideKick* and a RAM-hungry application like *Paradox*, you've previewed the RAM-cram frustrations that are in store for all of us until the new operating systems (and applications written for them) are available. Furthermore, neither OS/2 nor any of the advances mentioned above will ever be available to the owners of 8088/8086-based PC-compatibles.

The best interim cure for sixfortykayitis is a combination of a multi-tasking, windowing operating system shell (*Windows 2*, *Windows 386* or *DESQview*) and an extended memory scheme capable of loading program code above 640K. A couple of months ago, a new version of the Lotus/Intel/Microsoft Expanded Memory System (LIM EMS) was announced. The new version, 4.0, can load programs above 640K, recognizes 32MB of expanded memory (compared to the older version's 8MB limit), and (in conjunction with *Windows* or *DESQview*) makes it possible to bounce between active 640K work spaces.

Once the publishers of memory-resident programs revise them to take advantage of that capability, you should be able to load as many of them as you like without running out of room for your underlying applications. That is, provided you're willing to install a few more megabytes' worth of RAM chips.

LIM EMS 4.0 requires special hardware to handle all this, so it won't work on most existing EMS boards. It will work on older boards that support the AST/Quadram EEMS scheme or on extended memory running on a 386 processor. The 386 chip contains all the necessary circuitry for EMS 4.0's memory management and multitasking chores. Both Microsoft's *Windows 386* and Quarterdeck's *DESQview 386* were demonstrated with their EMS 4.0 drivers at COMDEX. And unlike most products previewed at this show, both are available to the public now.

Firms at COMDEX who announced LIM 4.0 cards (or drivers for their existing cards) for the PC were Quadram, AST, Intel, Tecmar and Profit Systems. PS/2 EMS 4.0 cards were announced by Quadram, Tecmar, AST, Everex, Orchid Technologies and IDEAssociates. Soon (by midsummer) every expanded memory board maker will have to go along by offering their boards with the necessary hardware and drivers to fully support EMS 4.0, but you can expect that to push prices up a bit in the process.

OS/2 Spurs Migration

The public's migration to IBM's new microcomputer architecture may be speeded by two other COMDEX events: IBM announced the sale of its one-millionth PS/2 system, and Microsoft and IBM have both announced dates for the shipment of the first version of OS/2.

OS/2 is the new operating system for 286/386-based PCs jointly developed by IBM and Microsoft. It doesn't run on earlier generations of the Intel microprocessors, such as the 8088s, 8086s and NEC V20s that power the PC, XT and Compaq DeskPro. Since IBM and Microsoft have jointly set the majority of existing microcomputer standards, there is every reason to expect that OS/2 will become the new standard Operating System (OS) for 80x86 microcomputers. OS/2's significant contributions are the ability to run multiple programs simultaneously (multi-tasking) and the ability to recognize up to 16 million bytes of contiguous memory, vs. PC-DOS's limit of 640K.

The initial version of OS/2, 1.0, officially ships from IBM on December 4, 1987. This is the version without the Macintosh-like windowing environment already available in *Windows 386* and *Windows 2*. IBM and MS say that version 1.1 (also known as the Presentation Manager version) won't be ready until the summer of '88. A third version of OS/2, which runs only on IBM's PS/2 models with Micro Channel Architecture, is called the Extended Edition. It adds multi-user and networking capability and an interface to IBM's larger systems. EE also incorporates a fully relational, mainframe-like database management program.

OS/2 will not be available on retail shelves in a "generic" Microsoft version for compatibles. Owners of 286/386-based PC/AT clones will have to buy it from their machine's manufacturer. Microsoft is already shipping OS/2 to clients who make compatibles. Those companies will still have to write their own device drivers and prepare documentation before they can start shipping OS/2 with their machines.

Copyright ©1987 by Ken Milburn. All rights reserved. *Ken Milburn is a freelance writer on Microcomputers. His articles have appeared in numerous computer publications, including PCWorld, InfoWorld, Computer Graphics World and MicroTimes. He also does system configuration for small businesses. He can be reached at (415) 331-6926 or by sending E-mail to (ken) on the WELL, (415) 332-6106.*

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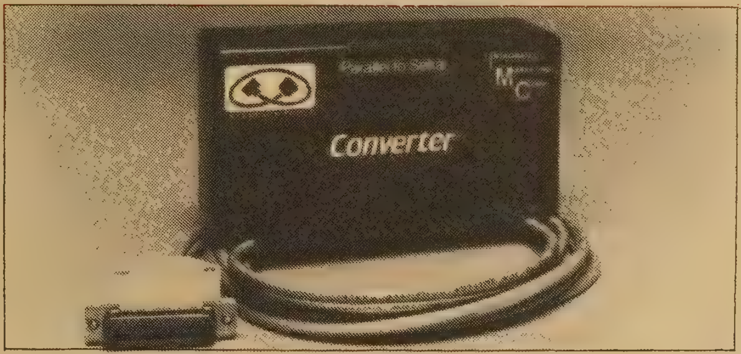
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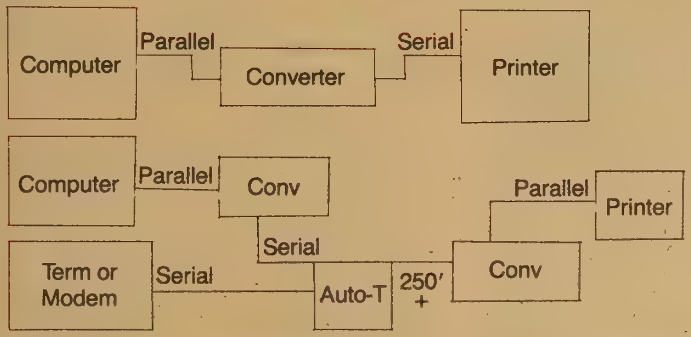
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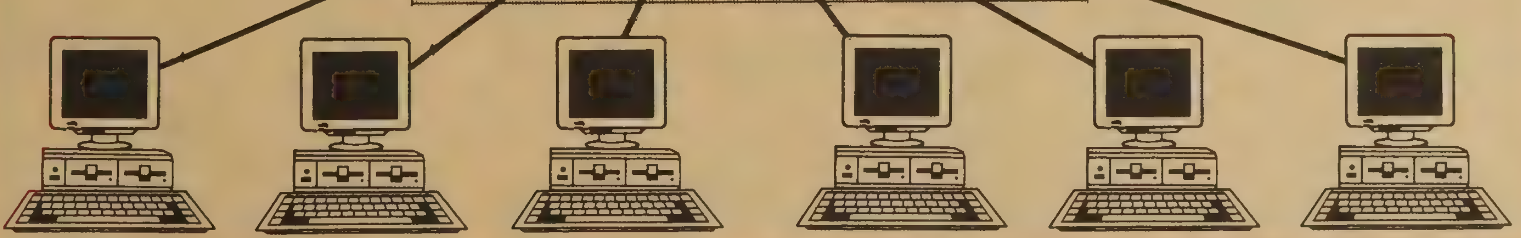

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New Windows And DESQview

As mentioned earlier in this report, *Windows* and *DESQview* have been offering a degree of relief from the limitations of PC/MS-DOS for some time. More advanced versions of both products, designed specifically for 386 machines, were shown at COMDEX. In fact, you saw one, the other or both running in nearly every booth.

Quarterdeck introduced *DESQview 386* to support the running of 32-bit protected mode software on 386 computers and add-in cards. Applications that do this aren't re-written for OS/2, but look like ordinary DOS applications and will run concurrently with them under *DV386*. The secret is DOS-extender, a programming routine that lets ordinary DOS code run in up to 32MB of continuously addressable RAM. The first application to use it will be the *Paradox* database from Borland's Ansa Division. Both *DV386* and *Paradox 386* will be available in January.

Windows 386 was actually shipping before COMDEX. It does true multi-tasking, has overlapping windows (rather than the side-by-side variety found in older versions) and a much "cleaner" overall design. *Windows 386*'s user interface is identical to the forthcoming *Windows 2* and Presentation Manager interfaces, so it will eventually contribute to providing us with a uniform, totally graphical user environment across 286, 386 and OS/2 systems.

The Windows Wars will eventually be won by *Windows*, and not only because IBM and Microsoft's joint clout is overpowering. The new versions of *Windows* (2 and 386) have the identical screen appearance and command structure as OS/2's Presentation Manager and IBM's new standard environment for its larger systems. My theory is further supported by the fact that there were more new applications written directly to the Windows interface introduced at COMDEX than one had the time to examine. All the leading applications publishers (including Lotus, Ashton-Tate and WordPerfect) have said they'd make "significant" announcements "in the near future." Translate that to mean that we can look for the first industrial-strength Windows database manager and word processor in time for Spring COMDEX.

Microsoft introduced the most significant new *Windows* product, *Excel*, a spreadsheet program that knocks the socks off *Lotus 1-2-3*. You can "desktop publish" your spreadsheets into invoice forms and reports; you can link as many individual spreadsheets (of up to four million cells) as you like; automatic auditing is built-in. You can record macros on the fly or use the macro commands and 355 functions as a spreadsheet programming language.

If all this makes you want to dump your old spreadsheet, have no fear for all the work you've put into it. *Excel* reads both macros and data from *Lotus*. It also reads data from *Symphony*, *Framework*, *dBASE* and *Multiplan*.

Now for the discouraging news: *Excel* won't run on any but 286- or 386-based micros. Borland's *Quattro*, discussed in more detail below, runs a close second and works just fine on an ordinary PC.

I mentioned that pro-level word-processing still isn't available to *Windows*. Microsoft says that its eventual product for the environment won't be called *Word*, but will be an entirely new package. Meantime, they've introduced a really clever $50 utility for *Windows* that gives you an on-screen preview of hard-copy page make-up and lets you incorporate any *Windows*-compatible graphics into text. It doesn't incorporate many of the more refined page-makeup talents of *PageMaker* or *Ventura*, but, for lots of businesses, the $50 MS is asking for PageView may be all they ever need to spend on publishing software.

As businesses find themselves needing to create more and more technical illustrations for insertion in their desktop-published manuals, reports and training materials, they will find themselves using more 3-D drafting software.

The most interesting non-Microsoft business program for *Windows* is one that may save you from the ire of the IRS. Called *TaxView*, the program at first seems to be nothing more than perfect reproductions of all the IRS's forms on your EGA screen. Surprise! Its 40 forms are all linked together. Computations occur automatically in the background, as soon as you enter anything into one of the blanks. The results are reflected wherever applicable on any of the forms. Even if all you have is a dot-matrix printer, *TaxView* will print out legal copies of all the completed forms for you. You don't even have to go to the Post Office. There's lots more to this incredibly sophisticated $115 program, but the bottom line is that this program makes it easy and efficient for even a dummy like me to fill in the new "easy" IRS forms.

Desktop Publishing, Graphics

Since *PageMaker* has given more people reason to install *Windows* than any other product, it's no wonder that the bulk of new *Windows* apps are aimed at the desktop publishing and closely related graphics markets. *PageMaker* itself attempts to overcome *Ventura Publisher*'s significant lead in PC publishing with the release of version 3.0.

The new version reads and writes directly to word processor files, automatically flows text through long documents, and uses style sheets. Judging from the demos, the interface is still familiar and the program hasn't lost the intuitive "feel" that so endears it to graphic designers and novice users. Aldus will simultaneously release version 3.0 for both the PC and the Mac. Meantime, pricing is getting closer to *Ventura's*, too. The Mac version will sell for $595 and the PC version for $795.

COMDEX gave birth to several applications aimed at overcoming the average business person's aversion to "artistic" endeavors like painting and drawing. Several scanner manufacturers are pushing "grey scaling" software that lets a scanner "see" a photograph as up to 64 shades of grey instead of producing the usual high-contrast black or white image. Yet another group of programs, like *Adobe Illustrator* on the Macintosh, let you trace a line-drawing over a scanned image. You can then enlarge, reduce, rotate and otherwise edit the resulting drawing with no loss of resolution or accuracy. That means that the same drawing can be used over and over again in a variety of publications.

Micrografx, the people who put the first drawing program on the PC, and who developed *Windows Draw* and *In*A*Vision*, showed the first *Illustrator*-type program for the PC. Also a *Windows* application, it is called *Designer*. The program looks to be more powerful than *Illustrator* and much easier for novices to understand. Furthermore, it runs in color (EGA or VGA) and lets you use fill patterns other than grey scales. You can bring in a bit-mapped image from a paint program, clip-art library or scanner. Then bitmap images can be scaled, stretched, colored or cropped before being used as templates for tracing. In tracing over the bit mapped template, you compose an object-oriented lined drawing that can then be manipulated and edited without paying any penalty in hard-copy resolution — regardless of the final size.

Designer lets you create up to 3.2 million different custom colors. Drawings can be on multiple layers, making it easy to put different colors on different layers for automatic color separations. A single drawing can be as big as 14 by 14 feet. You get all this for about the same price at *Illustrator*, and it will be available in time for stocking stuffing — maybe. If the price seems a little high, consider that *Designer* comes with a big clip art library and a fantastic utility that will convert any object-oriented line drawing *Windows* file to AutoCAD and vice-versa.

Aldus (*PageMaker*) has a similar program for the Macintosh, called *Freehand*. I spoke to the Aldus folks, who said that they expect to have a PC version before midyear next. Meantime, they're being democratic by offering yet another way for non-artists to create illustrations. This one's a *Windows* application and isn't (yet) ready for the Mac. It's called *Snapshot*.

Snapshot lets you capture a TV image (from set, camera or tape) in either color or B&W, then "paint" it with tools powerful enough to turn a picture of your Granny into Christie Brinkley. The resulting image's resolution can then be enhanced to a publication-quality halftone (up to 256 levels of grey) for reproduction by a PostScript laser printer or typesetting machine. *Snapshot* runs on the PC, and its files can be read directly by *PageMaker* for the PC or transferred to any *Windows*-specific application.

3D Drafting Tools

As businesses find themselves needing to create more and more technical illustrations for insertion in their desktop-published manuals, reports and training materials, they will find themselves using more 3-D drafting software. The extra time and training it takes to create a drawing using these complex programs will be worth it because, once drawn, the same object can be accurately re-positioned and combined with other objects to form new drawings. There are even techniques for translating such drawings for further enhancement by programs such as *Publisher's Paintbrush* and *Micrografx Designer*.

Three-dimensional drafting, modeling and illustrating programs were shown by a number of established publishers: Autodesk, VersaCAD, Drafix and Generic CADD. Each takes a different approach: Autodesk's *AutoShade* is an add-on utility for *AutoCAD 9* that takes a two-dimensional plan and extrudes it into 3-D wireframes. No means is provided for creating the objects in 3-D and then moving them into 2-D, but you get an easily understood "point and click" user interface, unlimited light sources and up to 256 colors (in VGA or PGC).

VersaCAD's 3-D module comes pre-packaged with 2-D drafting and bill of materials. Either of the above packages is best suited to professional draftsmen in the architectural or engineering fields.

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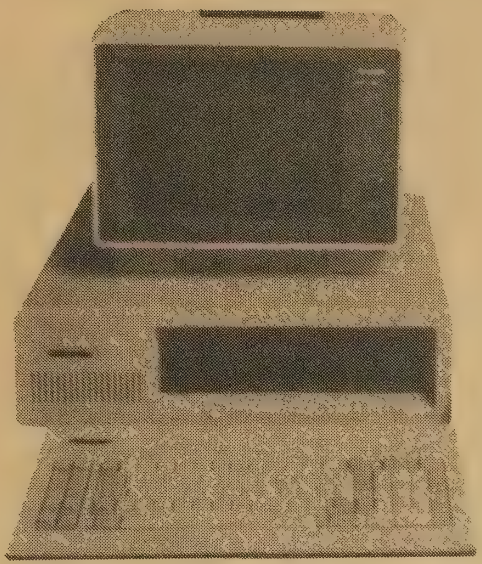

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product for the PC. Drafix has perhaps the best user interface for the novice draftsman that's available today, and their moderately-priced ($395) 2D product has been well received. If you want 3D, you have to buy both packages together, but the price is well under $1,000. That's a heck of a bargain when you discover that *MegaCADD* used to sell for $2,200 by itself — and that both *AutoCAD* and *VersaCAD* are in the three grand range.

Generic CADD, the all-time drafting software bargain at $99, has introduced a $200 3D package (available around the first of '88) that may be the most flexible true 3D drafting package of those mentioned here, in that it's the only one that lets you subtract one shape from another. That's an extremely useful capability, since nearly every object that surrounds us has some odd-shaped indentations in its surface.

Agenda, Quattro, And Other Delights

Graphics applications may have been the most revolutionary software introduced at COMDEX. That fact notwithstanding, the one program that got more attention than any other was a text-oriented business tool. Lotus' *Agenda* is the precursor to what may become a whole new category of software called Personal Data Management.

Agenda is so amazingly flexible that its real uses and purposes are impossible to describe (at least in less than several thousand words). Most of us who saw the demos were reminded most of *HyperCard*, but without the graphics and with a Lotus user interface. Basically, you can enter any amount of information, any way you want — then define what you want to retrieve and how you want it presented "on-the-fly."

> **Quattro does nearly everything Excel does, does it faster and doesn't require Windows or any of the souped-up hardware that is needed to make Windows practical. This jewel isn't copy-protected, costs half as much as 1-2-3, and runs twice as fast.**

The award for "hot rod" spreadsheet of the year goes to Borland's *Quattro*. It does nearly everything *Excel* does, does it faster and doesn't require *Windows* or any of the souped-up hardware that is needed to make *Windows* practical. In fact, when it comes to menus you have your choice of a familiar *1-2-3* lookalike or a *SideKick*-like pull-down, point and click arrangement. This jewel isn't copy-protected, costs half as much as *1-2-3*, and runs twice as fast. Macros don't appear to be as powerful as in *Excel*, but they certainly match Lotus' and can be recorded while you use the program. There's also a built-in macro debugger. Like *Excel*, *Quattro* supports PostScript and H-P laser printers, so you can "publish" your financial reports and projections.

The booth that consistently attracted the biggest crowds was WordPerfect's. Their song and dance show, performed by company employees, was silly and amateurish, but the public still hung in the aisles to hear all the news. Versions of *WordPerfect* were demonstrated for the Macintosh, Atari ST, Apple II and Commodore Amiga. So was the upcoming 5.0 version of *PC WP*, which comes pretty close to being a What You See is What You Get desktop publishing program. You can incorporate graphics, use absolute measurements for page layout, and extend parallel columns past a page break. Typesetting commands are much more flexible, matching or surpassing those in *MS Word*. The program is even smart enough to translate formatting commands for one type of printer to those for another type of printer. So if you want to lay out a page for a LaserWriter, you can get a hard-copy proof from your dot-matrix printer without first having to re-format the document. Exciting as all this may sound, don't expect to see 5.0 on dealer's shelves until March.

WordPerfect also announced improved revisions of their spreadsheet and of the *WordPerfect Library* (to be called the *WordPerfect Office*), and previewed a fully-relational database management package.

Whew! Those are just the *highlights* of the applications software announcements that impressed me most at COMDEX. I couldn't cover the physical territory to see everything at the show, but have reported on the major players who are most likely to set the trends for the coming year. Real Soon Now, I'll cover some of the more exciting in PC and PS/2 hardware. ☐

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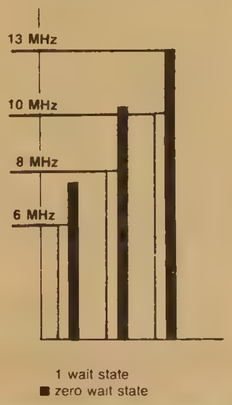

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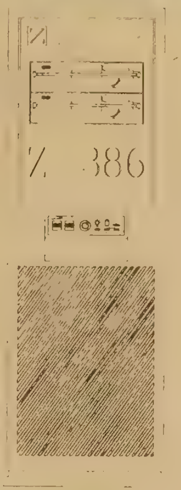

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Fading Into The Background

By Bennett Falk

The gurus were having a slow day until the phone rang, and an edgy voice on the other end of the line asked “Can you help me? I just tried to run something in the background and it didn't work.”

Now usually running things in the background is easy enough. Any UNIX book will tell you that putting an ampersand (“&”) at the end of a command line will run the command in the background. A simple example is the command to copy a file:

```
cp big_file big_file2 &
```

This command copies “big_file” to “big_file2.” Depending on the size of the file, this could take a while. Putting such a command in the background gives the user a chance to do something else without having to wait for the file copy to complete.

“How do you know it didn't work?” the gurus asked.

“Well, I used ‘wait,’” the caller replied.

The “wait” command is the customary way of checking on background processes. The user just types “wait” in response to the shell prompt and presses return. If another shell prompt is printed immediately, no background jobs are currently running. However, if the wait command does not immediately return another shell prompt, there are background jobs running.

> **Usually running things in the background is easy enough. Any UNIX book will tell you that putting an ampersand (“&”) at the end of a command line will run the command in the background.**

To see what these jobs are, the user must interrupt wait by typing Control-C or hitting the delete key (different keys can be configured to signal an interrupt, so it's wise to check with the system manager if the obvious choices don't work). When interrupted, wait prints the process id number and status of any jobs put in the background from the current shell.

“And what did ‘wait’ tell you?” the gurus inquired.

“Well, first of all, I didn't have to interrupt it; as soon as I pressed return, ‘wait’ printed a message and gave me a shell prompt. The message said:

```
[1] + Stopped (tty output) bbs."
```

In spite of its appearance, this is quite an informative message. First, the “[1] +” just indicates that this is the first of the current background jobs. “Stopped (tty output)” is the status of the job. The common statuses are “Running,” “Stopped,” “Done,” and “Killed.” A stopped job has entered computer limbo: it's still in memory, but for some reason cannot continue running. “(tty output)” is the reason this job has been stopped; it means the job was stopped for trying to send output to the terminal screen. Finally, “bbs” is the command that the user tried to put in the background.

It wasn't at all clear why putting this command in the background had failed. The gurus tried an experiment with something trivial. On their own system one of them issued the command:

```
ls -l &
```

When return was pressed, the UNIX process ID number for the background job was printed on the screen.

```
[1] 7102
```

This was followed immediately by the output of “ls -l,” a long listing of the contents of the current directory. At least on the gurus' system, simply having “tty output” was insufficient cause to stop a background job.

Someone suggested to the caller that he try “ls -l &.” He did, and it fared no better than his first command. Now “wait” told him that two jobs were stopped:

```
[1] - Stopped (tty output) bbs
[2] + Stopped (tty output) ls -l
```

Unhappy at the prospect of background jobs simply accumulating at his terminal, the caller was rapidly losing patience. At one point he tried to log out, only to be greeted with a vaguely accusatory message (“There are stopped jobs.”) and another shell prompt.

The gurus did not improve things one bit by adopting an attitude of complacent mystification. Someone had the presence of mind to take the caller's number and tell him they'd get back to him shortly.

The gurus adjusted their bow ties and began to ruminate on what it means to run something in the background. They all conceded that managing background jobs does take a little common sense. On many UNIX systems, once something is in the background, it can't be brought into the foreground again. It makes no sense to put something in the background if it needs more input from the user, and many UNIX systems will simply stop any background process that tries to get input from a terminal.

> **On many UNIX systems, once something is in the background, it can't be brought into the foreground again. It makes no sense to put something in the background if it needs more input from the user, and many UNIX systems will simply stop any background process that tries to get input from a terminal.**

Similarly, it takes some care to manage the output of a background process. Putting a job that has output in the background makes no sense if the output comes to your screen and you have to wait for the output to scroll by on the screen.

But as the gurus had proven to themselves, just because a thing makes no sense doesn't mean it can't be done.

The smart thing to do with a background job's output is to re-direct it to some destination other than the terminal's screen. The “ls” command could be put in the background like this:

```
ls -l › files &
```

“› files” tells the shell to put the output from the ls command in a file named “files.” The output can be examined later at the user's convenience.

At length someone remembered that the gurus needed to return the user's call. They did so, and the first order of business was to get rid of the two stopped jobs that had been hanging around.

The gurus had already ascertained that the user's system was running 4.2 BSD, a version of UNIX developed at the University of California at Berkeley. Berkeley UNIX is justly famous for having taken the idea of background processing a step or two further by building several “job control” commands into the C-shell. These com-

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mands are "fg" to bring a stopped job into the foreground, "bg" to resume a stopped job in the background, "stop" to suspend a job running in the background, and "jobs" to list stopped and background jobs being run from the current shell. These built-in commands can be used with a special "suspend" interrupt ("^Z" or "^Y") which will stop a job running in the foreground and bring the user's login shell into the foreground to accept commands.

The gurus suggested that their client type "fg %2" and press return to bring the job 2, the "ls" command, into the foreground. He did so, and immediately the output of "ls -l" scrolled across the screen.

This had a salutary effect on the client's state of mind, and when "ls" finished, he was left with a shell prompt. Next he typed "fg %1" to bring the "bbs" command into the foreground.

"bbs" turned out to be a command to read a bulletin board on the client's computer, and rather than wait for a lengthy session to finish, the gurus urged their client to use ^Z to suspend the job and then kill it with the command "kill %1." He did this and so found himself back where he started, wanting to run "bbs" in the background and having no way to do so.

The gurus were unwilling to admit defeat on this matter, and quickly asked if they could have permission to dial in to the client's system and tinker with ways to put "bbs" in the background. Somewhat warily, the client consented, and shortly the gurus had their dialup connection and were crowded around a terminal trying to solve the problem.

> **Berkeley UNIX is justly famous for having taken the idea of background processing a step or two further by building several "job control" commands into the C-shell.**

The first suggestion was to re-direct the output of bbs into a file. But the command

```
bbs › read_me &
```

also stopped as soon as it was executed. Again the reason that was given for stopping the job was "tty output." The gurus realized belatedly that their command re-directed only "standard output" and did nothing to handle a second output stream ("standard error") that most UNIX commands have.

In the C-shell, re-directing both standard output and standard error is cumbersome, but after looking at the manual and thinking a bit, one of the gurus came up with a command that worked. It looked like this:

```
(bbs › read_me) ›& bbs_error &
```

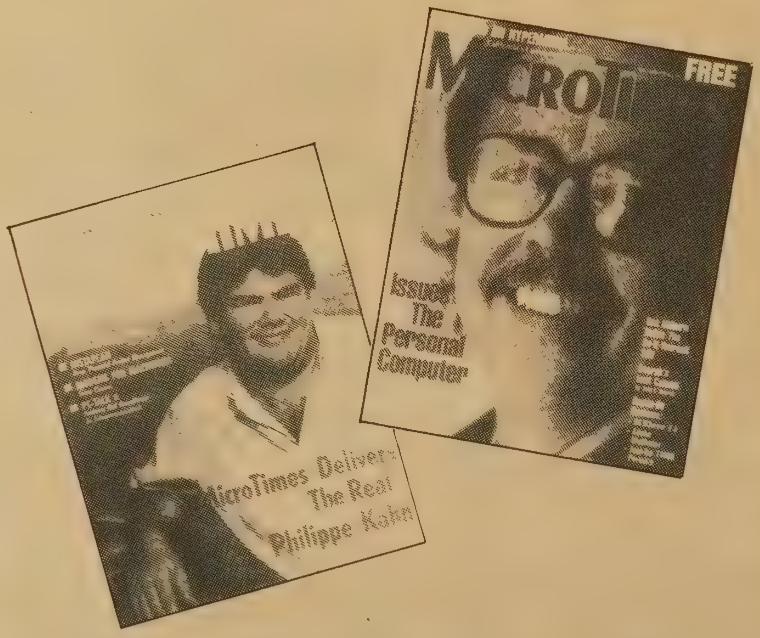
While this did what everyone wanted, none of the gurus was particularly eager to explain such a command to their client.

Furthermore, the example of this technique which appeared in the C-shell manual was followed immediately by an ominous warning: "Although robust enough for general use, adventures into the esoteric periphery of the C-Shell may reveal unexpected quirks."

Dismayed, they searched for alternatives. Someone idly formatted the C-shell manual entry and re-directed it to a file. Having nothing better to do, someone else "grepped" this file for the word "output" and then looked up each occurrence in the manual. At the end of the Job Control section of the C-shell manual was a reference to something none of the gurus had encountered before: "tostop," an obscure argument to the "stty" command. "stty" is a command to set the characteristics of a terminal connection. It can be used to set all sorts of things including, as the gurus now learned, whether or not background jobs would be allowed to produce terminal output.

First, the gurus used the "stty everything" command to check all the stty settings on the client's machine. To no one's surprise, "tostop" was set. They checked their own system and verified that "tostop" was turned off. Finally, they turned "tostop" off on the client's computer with the command "stty -tostop" and then attempted the simple test with the "ls -l &" command. The command was launched into the background and was unimpeded in sending its output to the screen.

The gurus whooped with delight and spent some time congratulating themselves. Finally, someone called the client, who dutifully took down the commands he was given, listened to a lengthy explanation of the problem and its solution, and thanked them politely. The client chatted amiably, hoping no one would realize that he'd forgotten why he wanted to run the bbs command in the background in the first place. He needn't have worried. ☐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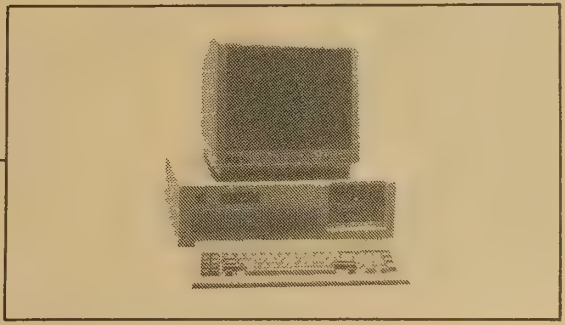

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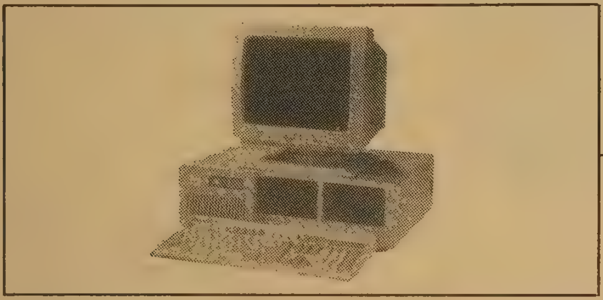

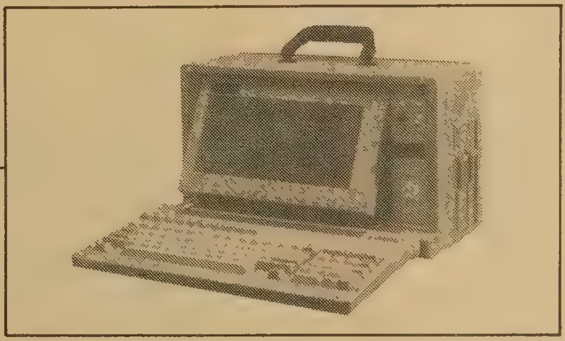

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TELECOMMUNICATIONS

Reflections On The White Boys' Club

By Brock N. Meeks

Buy a modem; join the club. A very exclusive club. Membership by default.

You joined the first time your modem screeched its first greeting to a remote computer; your name was forever inscribed in the registry of the information age's most elite group: The White Boys' Club. It's not hard to define the White Boys' Club; explaining it is harder.

A Color Blind Community?

The notion that the online community is "color blind" is false; online demographics, if tabulated, would show a staggering imbalance in our little community. Certainly the "color" of one's phosphor is pretty much the same, and, if you read between the lines, if you "listen" to the tenor of the thousands of messages, you'll find most sound alike. Why?

It's because the online community is dominated by white males, all from basically the same socioeconomic group. There is a dearth of women, Hispanics, blacks, Asians, American Indians, and other ethnic groups — this in a medium which prides itself on being the "great equalizer," one that blurs the lines of race, color, creed, and gender.

Whose Fault Is It?

There is no boogieman, no closeted conspiracy to blame for the lack of minority participation in the online community. I wish there were — it would at least provide a standing target. The real reasons are much less tangible.

A black friend of mine proffered this comment: "How can you explain a 'society' that has so limited the options of many young blacks, as well as other minorities, that they have no incentive for using the technology of telecommunications? I mean, when a kid can make $800 a week selling PCP or crack on the streets, you're going to have a hell of time sitting him in front of a keyboard and convincing him to 'log on.'"

It sounded like something I might have said years ago: just as impassioned, just as well-intended, and just as wrong.

It is beyond arguing that minorities have fewer options than a "just society" requires. But it is also true that many fail to avail themselves of the opportunities that do exist. Is this "society's" fault? Not if by "society" we mean what my friend meant: the White Boys' Club. It's more a result of omission than commission — the problem arises out of our failure to make these opportunities widely known, and fairly represented. Technical experts, high-tech "progressive" companies, journalists, teachers — all have to help drive home to those unaware of the opportunities online the simple fact that such a technology exists, and offers some potential improvement for their lives.

Minorities are absent from our little electronic enclave, not because of perversity or willfulness, but because of ignorance. It is, after all, tough to make such choices if you've never seen evidence that such choices matter, or even exist.

But we can do so only by avoiding two opposite traps. The first trap is the one my friend quoted above fell into: supposing that some amorphous "society" is principally responsible. The second pitfall is the one that proves so tempting to those that faithfully read George F. Will's weekly columns: the notion that the solution is to stop hand-holding the "disadvantaged," including their children, and hold them responsible for their unconcerned behavior; that we should simply demand they "shape up," "stop being stupid," and "get online."

Such outspoken "evangelism" about "going online" makes as much sense as lecturing me about what fork to use during high tea with the queen of England. Minorities are absent from our little electronic enclave, not because of perversity or willfulness, but because of ignorance. It is, after all, tough to make such choices if you've never seen evidence that such choices matter, or even exist.

There are no role models, or precious few of them. Online "evangelists" cannot even persuade the majority of those using computers to add a modem to their high tech arsenal.

Such feeble efforts as are made to "recruit" members of the minority community usually parade intangible "advantages" before their eyes: "It'll improve your life"; "You can upgrade your information base"; "It will make your life easier." We tell them that hard work and perseverance pay off: "Sure, the communications software is a little hard to use...Yes, it's confusing to set up your parameters, but it's worth it." And the litany goes on and on. There is little or no connection between such "online advantages" and everyday life.

Who Needs It?

The National Black Computer Network (NBCN) operated on The Source as a kind of "nationwide clearinghouse of black information resources," according to its founder, Mike Batie, vice president of engineering for PCE, a minority owned computer company. NBCN carried everything from the text of black newspapers to a black professional resume database for potential employers to scan. The system failed miserably.

Today NBCN is barely breathing. It exists only as a three-computer network, operating under RBBS software. If it were in the hospital its status would be critical.

For Batie, NCBN's troubles are something of a mystery; however, he offers a small explanation: "When black engineers have to struggle all through their education just to graduate, they don't see any advantage in learning anything else. If there's any black people reading this, they'll probably get mad at me, but the majority of professional blacks just don't care about being online. It's ignorance or a fear of the technology, not being aware of the power of the technology."

The only solution Batie sees is to "keep hammering, hammering, hammering" at the "technical masses" of black professionals. "If we can't even get the engineers online, how can we expect Joe Blow to log on?"

Simple. We can't.

And as I come full circle on this issue, I'm not so sure we should even bother trying to broaden the scope of minority participation. Perhaps all my carping is in vain.

When you're fighting to make the rent, get a decent-paying job, or hold down both a career and a home life, sitting in front of a computer keyboard and "communicating" hardly seems a life priority. And if "communicating" is one of the major advantages of this medium, well, the online world has little to offer.

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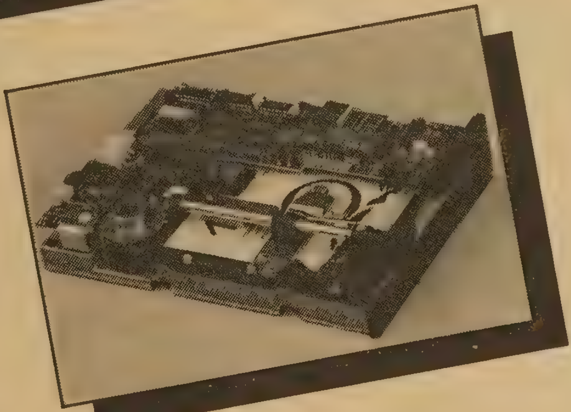

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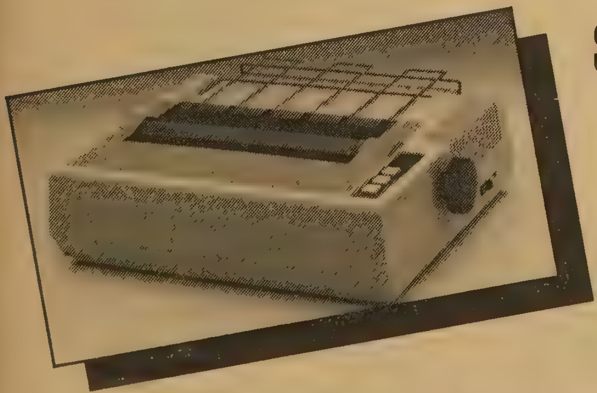

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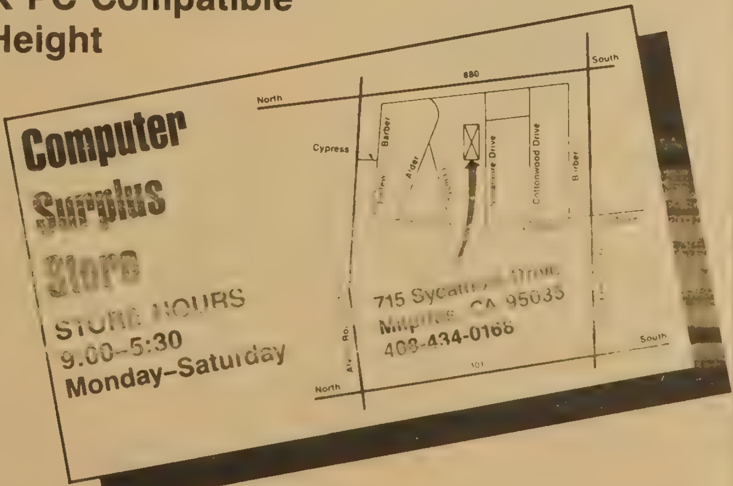
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The White Boys' Club is patterned after our white bread compartmentalized culture: cleverly cloistered lives, condo communities, corporate cubicles, and the recent phenomenon, "cocooning." This is an uptight culture where communication is a necessary evil; online we tailor our universe to whatever specifics we desire. It's safe to sit behind that keyboard and fire away. But it's not a culture that's attractive to ethnic groups that are traditionally closer knit and more open with each other.

Spend alternate Sundays in a white Baptist church and a black Baptist church, and prove it to yourself. The difference in the church services — even within the same denomination — is electrifying. The black church is much more open and spontaneous; the white church more staid. Perhaps the black community (and other minorities) don't have a need for "computer networking," as "human networking" is already built into their culture, built into their daily lives.

> **What happens 10 years from now when the online community "wakes up" to the fact that "we're all talking to ourselves" and finds a great segment of our society is technically "locked out" of our little club?**

All For One, None For All

I recently put this subject as a series of questions to an elite subset of the White Boys' Club, the students and faculty of Connected Education, an online Master's degree program, under the auspices of the New School of Social Research in New York. After an initial week of silence ("Who the hell cares?" was the basic perception) Joseph Zuckerman, a student and 25-year career chemist, came up with the following gem:

"Must every cultural, social, economic, racial, religious and ethnic group be equally represented in every human endeavor? I think not. I can't play the violin, draw a recognizable likeness, or speak Urdu. I don't ever expect to be able to do those things. That doesn't make me feel left out. There are plenty of members of various minorities who have just as much opportunity as I do to use a computer and become part of the computer communications [community]. The vast majority of people, majority or minority, choose not to do so. Why make an 'us vs. them' issue about it? Freedom of choice does not equal discrimination when the choice is up to each individual to participate or not."

Zuckerman is right on the freedom of choice issue, but I'm not sure he's on target concerning the opportunity for access. Do minorities have equal access to the technology? I think not. But it's not because the opportunities are not available; minorities are simply not invited. At the risk of offering up a retread argument, education is the key to opportunity.

A National Science Foundation study shows that only two percent of the country's scientists and engineers are black. Few have taken the advanced math and science courses available in high school; the numbers aren't increasing. Trends along these lines (with the notable exception of Asian Americans) can be seen in other minority groups and among women.

There is little effort being made to draw minority groups into "technology" in general, let alone "microcomputer-based telecommunications."

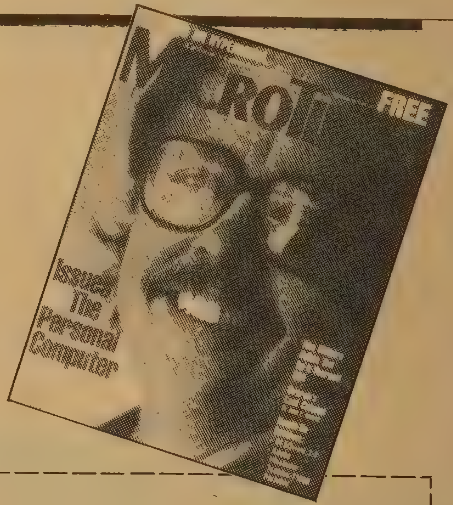
The White Boys' Club certainly needs to do a lot more than it's doing to increase the range of opportunities at the educational level. What is not needed is a kind of "high priest" attitude that proclaims: "To be online is to save the world." Such self-serving hyperbole does no one any good.

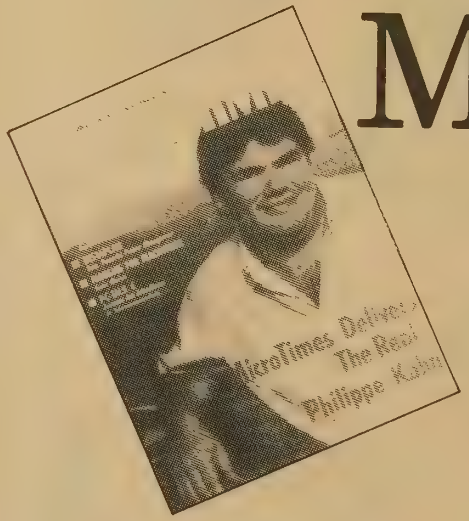
Bringing minority groups online *en masse* is no answer, either. However, there is a real danger in not recognizing minority groups' lack of participation. If, when the technology is presented in an accessible manner (i.e: when the technology is presented as applicable to daily life), the minority community still chooses to remain "off line," the story line will read very differently.

To ignore that a problem exists, to cheer a "color blind" medium and roll merrily along, is risky. What happens 10 years from now when the online community "wakes up" to the fact that "we're all talking to ourselves" and finds a great segment of our society is technically "locked out" of our little club?

I am uncomfortable being a member of the White Boys' Club simply by default. If I, having knowledge of the problem, do not undertake to explore a solution, then I become part of that problem. And that is simply a mantle I have no wish to bear.

And, I venture, the mantle will look just as unbecoming on you. ☐





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AMIGA

Faster Access For Floppy-Based Systems

By Matthew Leeds

Working with an Amiga is not always easy. I've gotten a little spoiled, since the system I currently use has over three megabytes of RAM and a 20MB hard disk; most Amiga users are working with two-drive systems with no expansion RAM. That is changing; I'm seeing more people with extra RAM added to their systems. The additional memory comes in handy when multi-tasking, but does little to speed up disk access from the floppies.

If you've added RAM to your system, or even if you haven't, you should know about *FACC* from ASDG. *FACC* (Floppy Accelerator) is an intelligent floppy disk cache program. It keeps the files most recently accessed from your disk drives stored in memory, combining the best aspects of a RAM disk, the Add Buffers command, and an excellent user interface.

What this all means is that if you have extra memory you can use it as an intelligent RAM disk. *FACC* keeps track of what files you have recently accessed, and which you are using most often, and keeps them in a dynamically allocated RAM cache.

An example may help explain. When you use the CLI to call a directory of a disk, you use the command DIR DFX:, where X is the number of the drive you want a directory from. AmigaDOS gets the DIR command from the subdirectory of your system disk (usually the WorkBench you booted with), then reads the directory and displays it on-screen. If you decide you want to see the directory again, the whole process has to occur again, with all the delays you would expect as the C subdirectory is located, the DIR command is read, and the directory is read, sorted, and displayed.

If you were using *FACC*, the DIR command and the directory would have been stored in RAM buffers; and the second time you read the directory it would have appeared moments after you completed typing the command.

This is just a trivial example of how *FACC* can benefit you, but there's more. So far it just sounds like the Add Buffers command. It isn't. *FACC* allocates RAM from fast RAM if you have it, not chip RAM. You can change the size of the buffer at any time, or eliminate it entirely. *FACC* will keep a history of how often it assists you, and how much memory it is using.

The latest version, *FACC II*, has additional features. It will discriminate between data and directory information and give preference to directory information. This means that files will be found more quickly using *FACC II*. The new version also has a special low memory handling capacity; if you are using *FACC II* with a current buffer size of 128K, and you attempt to run an application that needs 100K of memory, but there are only 50K of memory free in your system, *FACC II* will release the required memory from its buffer so that the new application can run. All this happens without user intervention.

FACC II has other remarkable capabilities, too numerous to mention. ASDG has released *FACC II* without copy protection, and has a very generous upgrade policy: they upgraded everyone who bought the original version of *FACC* free of charge. If you don't have a hard disk for your Amiga you need *FACC*. The difference is astounding.

Video Enhancements

I want to make quick mention of two new products for the A2000. The first is FlickerFixer from MicroWay, a board that acts as a video buffer. It stores each field of video as it is created by the Amiga, combining two fields and sending them as a single non-interlaced display. A multi-sync monitor is required, as the horizontal scan rate of the resulting signal is double the standard rate of 15.75KHz. The new display is remarkable. Hi-res 640 x 300 screens without flicker or jitter, perfect for word processing, CAD, or desktop publishing. FlickerFixer will be available around the first of the year.

The other product is currently just a prototype. NewTek, the company that produces the Digi-View video digitizer and *DigiPaint*, the HAM paint program, recently announced the Video Toaster, a board based video product. The Video Toaster is a video special effects system that combines ADO-like effects with frame capture, frame buffer, genlock, and NTSC encoding capability. Planned additions will include programmable switcher capacity, chroma-keying, an NTSC paint program, and support for a TMS 34010 video co-processor. The Video Toaster is the start of a complete video effects and editing system, based on the A2000. NewTek expects is will become available sometime in the first quarter of 1988.

Vizawrite For The Amiga

I also just received a copy of *Vizawrite Desktop* from Progressive Peripherals & Software. This is an Amiga version of their very popular word processing program for the Commodore 64 & 128. I had heard rumors about bugs in early release versions of *Vizawrite*, but the version I received (V1.2) seemed to work just fine.

Vizawrite is a WYSIWYG word processor that gives you full access to the Amiga system fonts. It lets you edit multiple documents, include black-and-white graphics in your document, and fully supports multi-tasking. It has all of the expected standard word processing functions and it took me only minutes to learn the basics of formatting, editing, and printing. The user interface is generally well thought out, with only a few poorly designed areas.

Vizawrite is the only Amiga word processor I've seen that supports both fonts and mail merge. There are some excellent bells and whistles as well. The History function keeps track of how many revisions have been made to a document, and also lets you password protect a document. Graphics can be resized on-screen, although text can't be wrapped around graphics. There is also an excellent boilerplate function that lets you store frequently used phrases, paragraphs, or even graphics, and easily place them in your document.

Vizawrite falls short in only a few areas. Since it does not make use of the standard Amiga preferences printer controls for the best (quality output of fonts) printer output, you are limited to the list of supported printers supplied by PP&S. You can use standard Amiga printers, but the results are just not as good. Check on the current list of supported printers before you purchase.

I'd also like to see the file requester fixed. Not that it's broken exactly, just slightly brain damaged. Two examples should suffice. As you would expect, double clicking on a file name in the file requester loads that file. However, double clicking on a subdirectory just places the name of that subdirectory in the drawer window twice, requiring you to delete the second occurrence. Also, the programmer has hard coded the available devices into the file requester and has only listed DF0, DF1, DF2, and DH0. You can change the assignment of the DF2 gadget through a config file, but the program should be smart enough to just check the system resources and display the appropriate gadgets for the available devices.

These, though, are minor quibbles that should not mar an otherwise well implemented program. If you are looking for a word processor that can handle fonts and B&W graphics, *Vizawrite* is more than capable. ☐

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Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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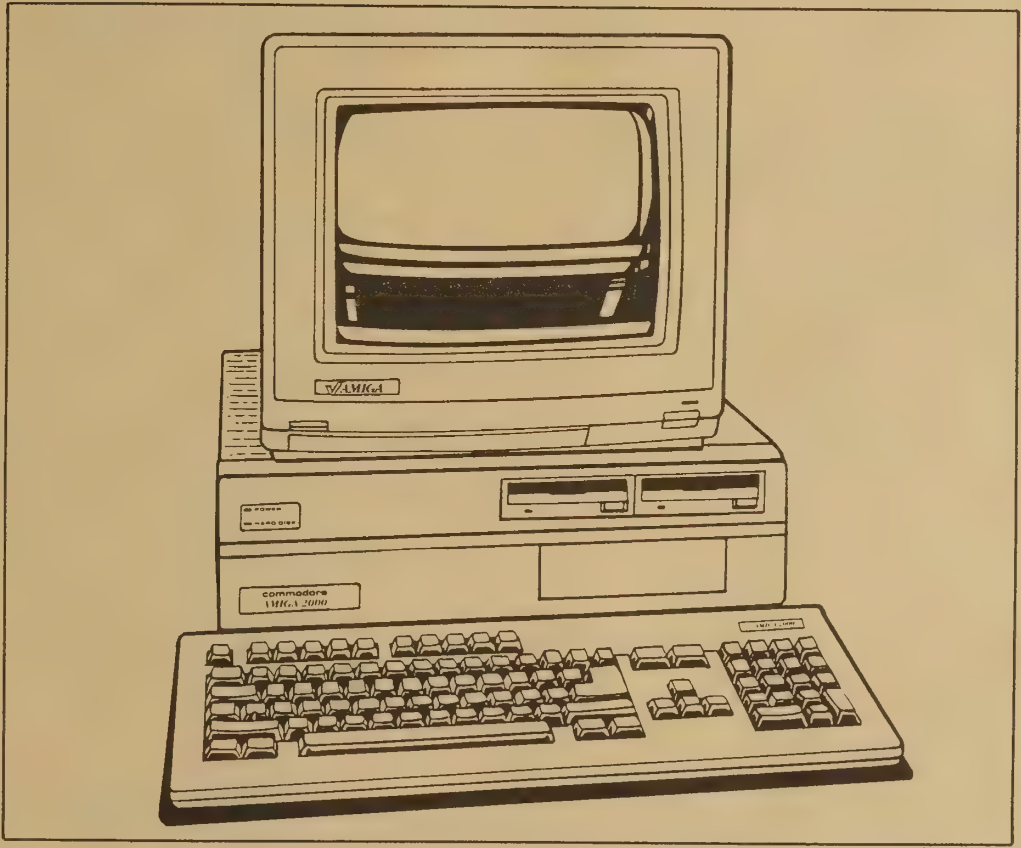

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The Word From COMDEX:

Atari Means Business

By Helmi Kobler

As promised in last month's column, I'm filing a report on Atari ST and Mega developments at the Fall COMDEX show (COMputer Dealers' EXposition), held in Las Vegas November 2-6. With approximately 100,000 people attending, it was a busy and crowded show. Atari's booth, located in the main hall of the Las Vegas Convention Center, was abuzz with activity.

Following what seems to be standard practice at industry shows, Atari brought along an assortment of independent developers who set up their presentations at various counters and cubicles within Atari's booth. Some of these developers were old favorites such as Antic, Soft Logik, QMI, and Data Pacific. Others were newcomers to the Atari market, and they brought with them a bunch of new products that I'll discuss a little later. Pioneer or fledgling newcomer, though, there was one common denominator that all participating developers shared, and it obviously reflected the message Atari wanted to convey at this show: that it's taking the business and professional side of computing very seriously. The dozens of products demonstrated in Atari's booth all fell into such productivity categories as desktop publishing and presentation, MIDI, Computer-Aided Design, connectivity, finance, etc. Not a single game was found on the floor. Likewise, Atari's new Mega 2 and Mega 4 "business machines" were used almost exclusively for product demos. I caught a glimpse of a lone 1040 ST running in some secluded corner of the booth, but that, I think, was the extent of the ST's presence at this COMDEX (Atari 8-bit computers such as the XE were not represented at all, by the way).

Of course, this doesn't mean that 520s and 1040s are being phased out by Atari or its developers. STs and Megas, with rare exceptions, are completely compatible, and although a 520, with its modest 512K RAM, may choke on some of the new memory-intensive applications, there's nothing to stop a 1040 from handling them. But I can see Atari's reasoning for pushing a business/professional image — at a show such as COMDEX where it's usually the "bigger and better" productivity stuff that gets the attention, it's smart for Atari to position itself as a business computer company after struggling with a game machine image for years.

In surveying the new products Atari announced at this show, it's clear that the old game-machine image is fading. For instance, you certainly won't find Atari's new Abaq transputer in any family game room.

In surveying the new products Atari announced at this show, it's clear that that old image is fading. For instance, you certainly won't find Atari's new Abaq transputer in any family game room. The Abaq is a 32-bit workstation that connects to any ST or Mega through its DMA port, and sports a $3500-plus price tag. It's based on the Inmos T-800 transputer chip which, thanks to a technique called "parallel processing" (where instead of the conventional single processor, multiple processor chips are used to work out computations), allows the Abaq to perform between 10 and 12 million instructions per second (MIPS). Terms like transputer, parallel processing and MIPS may all seem meaningless — in plain English, the Abaq runs over 10 times faster than an ST or Mega. It also offers four graphics modes that will make your jaw drop. The Abaq can display 16 colors in 1280 x 960 resolution, 256 colors in 1024 x 768, 256 colors in 640 x 480, and 16 million colors in 512 x 480. And you thought 16 colors in 320 x 200 looked pretty!

As you've probably gathered, the Abaq is a professional workstation designed for graphics-intensive applications — the kind of thing an engineer would use. Atari's no doubt hoping Abaq will challenge workstation leaders such as Sun Microsystems and Apollo — even the Macintosh II. Whether it will succeed or not is a hard thing to predict. Since the Abaq can't run ST applications (it uses the ST or Mega only as a terminal for keyboard input, etc.), Atari must convince software developers to write software for the Abaq. That will take time, and many users may be inclined to go with an established leader such as Sun instead of the new, albeit impressive, kid on the block. We'll see. The Abaq is scheduled for release in the second quarter of '88, though some Atari personnel I spoke with seemed hesitant about giving any solid release date for the machine.

Also announced at COMDEX was IDRIS, a new operating system developed for STs and Megas by Computer Tools International of Federal Way, Washington (206/838-4990). IDRIS offers two distinct advantages over the ST's native TOS operating system: it performs multitasking and processing, and is extremely similar to the UNIX OS, allowing for UNIX applications to be easily ported over to an ST or Mega running under IDRIS. Several such ports were demonstrated in Atari's booth, including three word processors, networking software and a point-of-sale system. Like the Abaq, IDRIS is not targeted for the average ST or Mega user. The current and prospective software that's to run under it is business-oriented, and I'm told that to get IDRIS's complete library of routines and utilities up and running takes nearly 20 megs of hard disk space. Unless you have a genuine need for multitasking and processing, you'd be better off running TOS business applications. IDRIS is available now from Computer Tools International for $800.

Atari's long, long, long-overdue (two years, in fact) Compact Disk drive was another item that surfaced at COMDEX. It could look a little handsomer, but what it lacks in aesthetics is made up in its $599 retail price (discounting could probably bring it under $450) and its ability to play music as well as read computer data.

The big deal about CD-ROM technology, of course, is its ability to store huge amounts of information on a tiny compact disk: 540 megabytes, or over 200,000 double-spaced typed pages, in Atari's case. The typical contents of CD-ROM disks are complete encyclopedias and other reference books whose contents can be accessed in just a few seconds. The only significant limitation to CD-ROM technology is that a CD-ROM drive cannot write to a compact disk, it can only read from it. Information, then, must be permanently written to the disk before it leaves the factory. Atari plans to ship its CD-ROM drive in February '88. Even if it makes it to the

---

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

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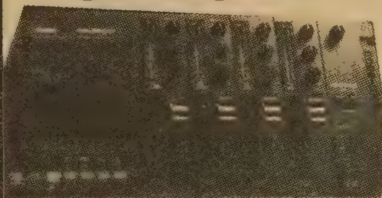

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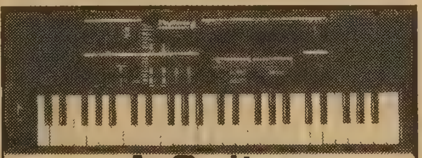

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store shelves on time, there won't be many CD-ROM applications to play on it. *Facts-On-File*, the only application I know that's being developed for STs and Megas, is a picture dictionary planned for release in early '88. It will be more than a year, perhaps, before ST users have access to on-line encyclopedias. On the other hand, Atari's announcement brings us a step closer to that goal.

If you're interested in hard disk storage, Atari also announced the Mega File 20 and Mega File 40, capable of storing 20 and 40 megabytes respectively. Though both units will work with an ST through its DMA port, these hard drives are designed to fit directly under a Mega's CPU. The Mega File 20 has a list price of $899, a little steep, I think, for a 20 meg hard drive. The 40's price has not been set yet; however, both models are expected to be available by second quarter '88.

As I said earlier, third-party developers showed a variety of software products ranging from MIDI to finance to CAD applications, but it was obvious that the new product trend was focusing on desktop publishing: I counted five new page makeup packages on the floor. *Publishing Partner Professional* is an enhanced version of Soft Logik's (314/894-8608) *Publishing Partner*, the ST's pioneer desktop publishing package. This new version, priced at only $149.95 (the original *Publishing Partner* will be priced at $89.95 at *Professional*'s release), will feature automatic kerning and hyphenation, text wrap around regularly and irregularly-shaped graphics, object grouping, text and graphics rotation and skewing, style-sheets and import compatibility with *First Word* and *WordPerfect* text file formats. *Partner Professional* is scheduled for first quarter release, and judging by the bugs and unimplemented features in the COMDEX demo version, Soft Logik must be hard at work trying to meet that date.

> **Atari's performance at the show was impressive, and the new products were exciting. However, IDRIS is the only COMDEX product available now. Everything else is "just around the corner."**

G.O. Graphics's *Deskset* is another DTP package you can look forward to in '88. Unlike interactive page makeup applications that allow you to move page elements around the screen with a mouse, *Deskset* designs pages by way of Compugraphic typesetter commands. Although page design is more like programming than paste-up in this sense, *Deskset* offers a What-You-See-Is-What-You-Get preview mode. Although a command-oriented program is tedious, *Deskset*'s advantage over other publishing packages is that it can drive the 24,000 Compugraphic typesetters that exist in the U.S. G.O. Graphics is working on an adapter that will connect an ST to a Compugraphic machine, or *Deskset* files can be sent to typesetters through MS-DOS machines running the PC version of *Deskset*. And if you don't need typeset-quality output, *Deskset* is compatible with Atari's imminent SLM804 laser printer. PostScript printers, however, are not supported. Atari will be distributing *Deskset*, but has not announced a suggested retail price or release date.

The remaining three DTP applications shown at COMDEX were *Calamus* from ISD Incorporated in Canada, (416/479-1880), *GFA Publisher* from MichTron (313/334-5700) and Timeworks's (800/535-9497) *Desktop Publisher ST*, a surprisingly advanced package very similar to *Publishing Partner Professional*. Since I'm running out of room here, I'll have to report on these applications next month.

One quick observation about this Fall's COMDEX, though. Atari's performance at the show was impressive, and its new products, along with those from independents, were as exciting as the PostScript clones and fast 386 machines that were big deals to show-goers. But as you probably noticed in reading this column, IDRIS is the only COMDEX product available now. Everything else is "imminent" or "just around the corner." This makes me anxious, and dampens my enthusiasm for the new products announced. We all know how unreliable manufacturers can be when it comes to shipping products on time, and I bet that half of the products shown at COMDEX will never make it out the door, or will be delayed by months. So, though I'm encouraged by the strong show of support for STs and Megas, I can't get gung-ho over them. If they arrive when promised, I'll be happy. If they don't, you're sure to hear me gripe about it! ☐

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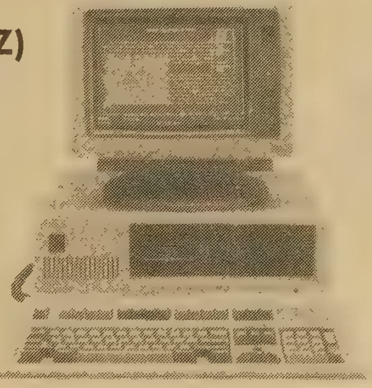

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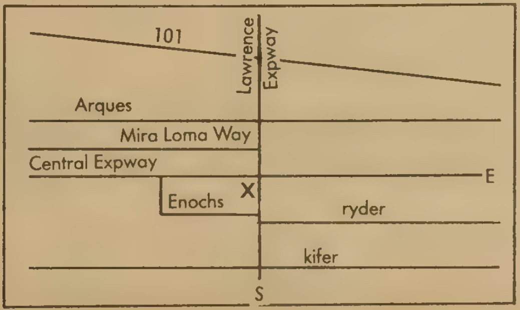
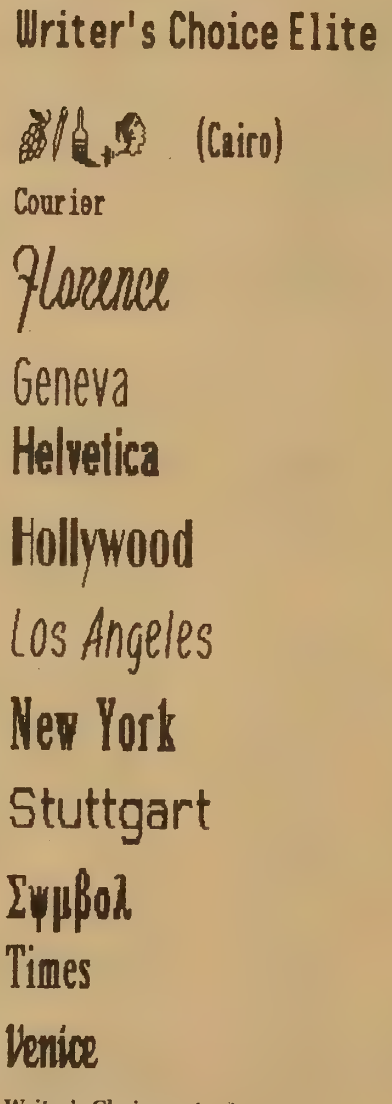


A Tale of Two Word Processors

By Mike Markowitz



Writer's Choice Elite

(Cairo)

Courier

Florence

Geneva

Helvetica

Hollywood

Los Angeles

New York

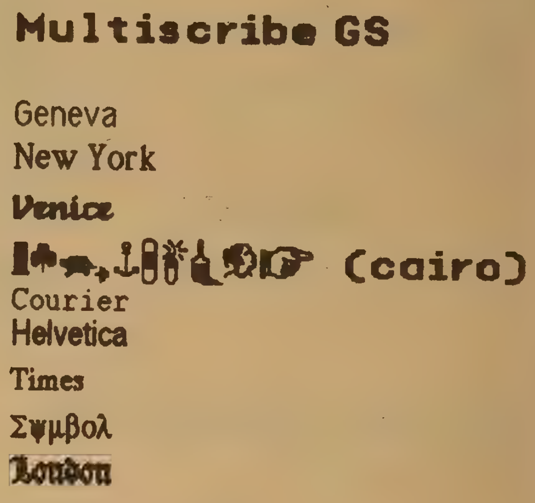
Stuttgart

Σψμβολ

Times

Venice

Writer's Choice output.



Multiscribe GS

Geneva

New York

Venice

(cairo)

Courier

Helvetica

Times

Σψμβολ

London

Multiscribe GS output.

It was the best of computers, it was the worst of computers, it was a technical flop, it was a marketing triumph, it had brilliant, dazzling graphics, it had muddy, fuzzy graphics, it had awesome sound, it had noisy sound, it had plenty of software, it had a dearth of software, it was the spring of hope, it was the winter of despair—in short, the Apple IIGS was so like its elder brethren that some authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only.

By Christmas of 1987 there were about 130 programs available that were written specifically for the IIGS. I think we all agree (unless we have the misfortune to be accountants) that the word processor is the Queen of Applications. How good are the available word processors for the IIGS?

At present, the two leading contenders in this area are *Multiscribe GS* from StyleWare, and *Writer's Choice Elite* from Activision. DataPak's *Graphicwriter*, in its newest version, also looks promising, and *WordPerfect* for the GS (version 2.0) is waiting in the wings to capture the high end of the market.

Superficially, *Multiscribe* and *Writer's Choice* look very similar. Both could be considered clones of *MacWrite*, which defined the "look and feel" of a word processor according to Apple's Human Interface Guidelines. Like a Macintosh word processor, a true (16-bit) GS word processor manages the screen as a single hug bit map. Most 8-bit word processors, in contrast, handle the screen as an array of characters. The difference in processing overhead is dramatic. The GS super-high resolution screen measures 320 by 200 pixels, or a total of 64,000 dots. A character-based word processor only needs to display 80 columns by about 25 rows—that's 2,000 screen locations. The situation is really more complex than this, of course, since a GS word processor also needs to worry about 16 colors, and multiple fonts and text sizes.

Both *Multiscribe* and *Writer's Choice* run under the ProDOS 16 operating system, which is still somewhat flaky. I have experienced crashes with both programs, usually when changing files or printing. These problems should be cured in future releases.

For the user, there is a performance trade-off. A GS word processor offers fancy special effects, at the cost of speed and capacity. Existing programs are slow to load, slow in scrolling around a document, slow in changing fonts, slow at everything. Even with a megabyte of RAM, the maximum size of a document is severely restricted.

Writer's Choice wastes some time and disk space by loading a completely unnecessary graphic screen for the user to stare at during boot-up.

Writer's Choice starts to slow down when a document reaches 10 or 12 double-spaced pages. It provides a series of increasingly urgent warnings as you begin to run out of free RAM. If you use only the rather ugly Shaston font (which is the default) you can create a document of 25 to 30 single-spaced pages on a 512K system. The manual for *Multiscribe* says that the document size is limited only by available memory, but the limits are probably similar.

For most users, the most important consideration in choosing a IIGS word processor will be "How are my documents going to look on paper?" *Multiscribe* is the clear winner here. Although *Writer's Choice* offers a greater selection of fonts, the *Multiscribe* fonts print out much sharper and more legibly, especially in the smaller sizes.

In larger type sizes, the *Writer's Choice* fonts seem rougher and more jagged. These observations apply only to the output from the ImageWriter—I did not have an opportunity to compare LaserWriter output.

Although both programs include the Cairo font, a collection of cute symbols, neither provides a keyboard template or any other kind of reference. I found this annoying.

Text and graphics integration is a major selling point for the IIGS, and here again *Multiscribe* is superior. *Writer's Choice* completely displaces text when it inserts a graphic, and the graphic itself looks severely stretched out and grainy. In *Multiscribe*, text and graphics can share the

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Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1987 by Mike Markowitz.

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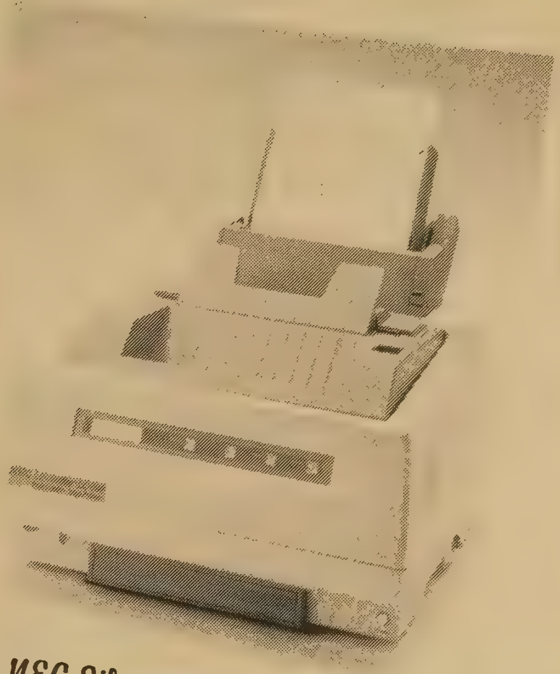

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same lines, and the program seems to compensate for any aspect-ratio distortion.

Another advantage of *Multiscribe* is the "Draw" function, which lets you paint lines, circles and boxes right in your document. This is not a full-featured graphics program—there are no pattern fills, for example—but it is very handy for charts and tables.

Writer's Choice is somewhat cheaper—$79.95 compared to $99.95 list for *Multiscribe GS*. You get what you pay for.

UPDATES

Brøderbund has released two long-awaited conversions for the IIGS: *Print Shop* and *Fantavision*. Both packages make skillful use of the computer's new capabilities, while maintaining downward compatibility with the earlier 8-bit Apple II versions.

Print Shop for the IIGS is surely one of the handsomest programs to appear for this computer. The screens are designed in a pleasing charcoal gray, with buttons that look three dimensional. The designers wisely maintained the original joystick interface, which works very smoothly with the mouse.

Best of all, *Print Shop GS* supports more printers than just the ImageWriter. Until now, IIGS owners without an ImageWriter II have been out of luck for color graphic printing. *Print Shop GS* has color print drivers for the old Apple Scribe, the C. Itoh 8510, the Epson JX-80, EX-800 and LQ-2500, the Juxi 5510 and the Okidata 292 and Okimate 20. A wide variety of common printers are also supported for single color output. This is a big advantage for schools (a major market for *Print Shop*) with a big investment in older printers.

> **Both Print Shop and Fantavision for the IIGS make skillful use of the computer's new capabilities, while maintaining downward compatibility with the earlier 8-bit Apple II versions.**

Early purchasers of *Print Shop GS* (until December 31, 1987) can get a free graphics library disk by sending Brøderbund a coupon, their receipt and $5.00 for handling.

The program can use all previous *Print Shop* graphics, fonts and borders. It includes 12 new fonts (named for California counties), 64 multi-colored graphics, 24 borders and a variety of panels. A Graphic Editor can be used to create new pictures, or add color to existing ones. Any greeting card, sign, letterhead or banner can be previewed on screen before printing.

Fantavision is an animation program that can be used to create short self-running "movies." The only big change for the IIGS version is a sophisticated library of sound effects that can be attached to specific frames. Animations created with the earlier 8-bit version of *Fantavision* can be converted to run with the GS version using a utility on the program disk. There is also an Unpack utility, which saves *Fantavision* screens in a format that most paint programs can accept and print out. *Fantavision* is a remarkable creative tool, but one that takes some time and effort to master.

PRODUCT INFORMATION

Multiscribe GS (version 2.0) by Kevin Harvey
Published by: Styleware
5250 Gulfton, Suite 2E
Houston, TX 77081
For Apple IIGS (512K)
List price: $99.95

Writer's Choice Elite by Version Soft
Published by: Activision
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Mountain View, CA 94043
(415) 960-0518
For Apple IIGS (512K)
List Price: $79.95

Print Shop IIGS by Corey Kosak
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(415) 492-3500
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Fantavision by Scott Anderson
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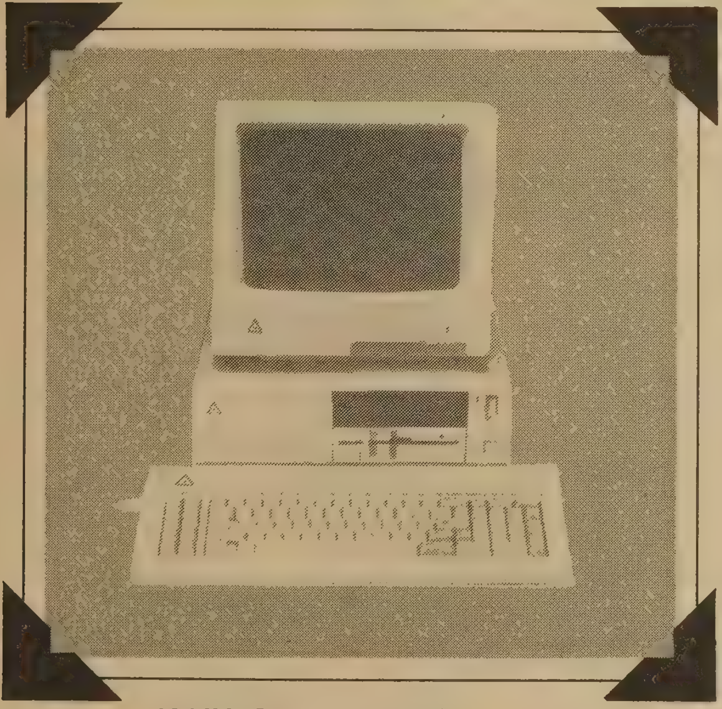

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Bridge For The CP/M User

By Robert D. Athey Jr.

Of all the games I've ever played, bridge is the only one that has kept its attraction over 30+ years. I delighted in the computer bridge games, when they became available, but the first I saw were MS-DOS. Recent catalogues (Dynacomp and Central Computer) showed CP/M versions, and I bought them. They help keep the mind sharp for the game I do get to play now and then, though they are no subsititute for the real thing.

Bridge Player Alice

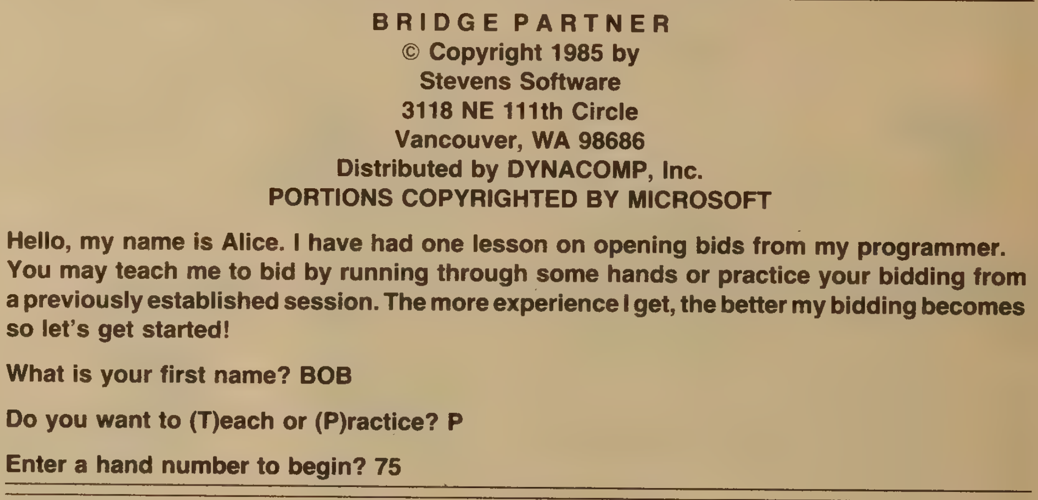
> **Alice's teaching mode allows you to look at each hand, in the sequence of bid; the computer will type in a bid for you to examine and change to fit your own strategy.**

The first of the games I gathered up was *Bridge Player Alice*. I was was surprised to find it a good attempt at that ever-popular buzzword, Artificial Intelligence. The program teaches itself to play whatever system of bids you use. *Bridge Player Alice* comes on one disk, plus documentation, in several program modules, including an installation module requiring the key controls for screen display for your specific terminal. This, as far as I'm concerned, is an unnecessary inconvenience — this information (if it exists at all where users can access it) is hidden in appendices of the user manual. The install program needs the "clear screen" command (in decimal) and checks the result by clearing the screen with a query "Did the screen clear?" That result checking is a nice touch for the non-techie trying this sort of thing out for the first time. I advise telling this program to store playing files on a disk in the B:drive, as you'll see a bit later. By the way, an MS-DOS version exists.

After installation, you can initiate the actual program two ways, by typing in "Play" or "Alice" to call up either *.COM file. The "play" command brings up a contract of six spades for you to play with the heart lead by opponents already in place. You can at best play for down one, and wonder how your partner ever got you into that. Upon completion of play of that hand, the initiating screen for "ALICE.COM" comes into view (we show it as Figure 1, below). As you can see, *Alice* is a Novice and wants to play your system.

You can play "Standard American," the tournament aficionado's designation for Goren's simple system, or you can build your own system. If you call yourself by the name of SA, you will play "Standard American," but your name will build new files. If you look at the directory of the disk (that you made by copying the Master disk), you'll see a lot of SA files (SA.1C, SA.2C, SA.1N,...)and not much room left for the new

FIGURE 1
SCREEN SHOT OF "ALICE.COM" OPENING



```
BRIDGE PARTNER
© Copyright 1985 by
Stevens Software
3118 NE 111th Circle
Vancouver, WA 98686
Distributed by DYNACOMP, Inc.
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Hello, my name is Alice. I have had one lesson on opening bids from my programmer.
You may teach me to bid by running through some hands or practice your bidding from
a previously established session. The more experience I get, the better my bidding becomes
so let's get started!

What is your first name? BOB

Do you want to (T)each or (P)ractice? P

Enter a hand number to begin? 75
```
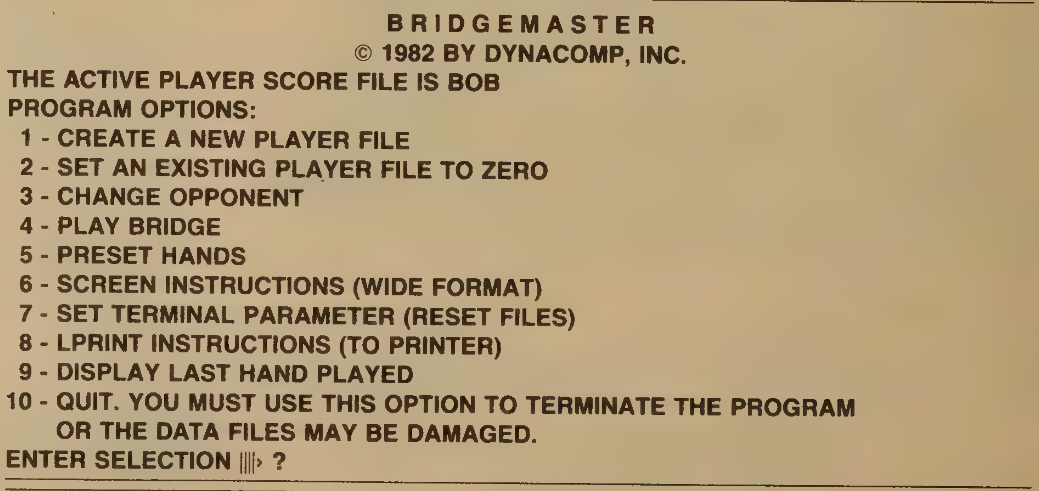
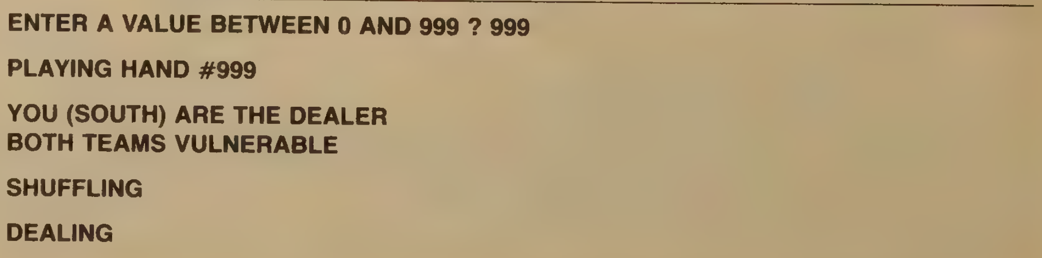

FIGURE 2
SCREEN SHOT OF "MENU.COM"



```
BRIDGEMASTER
© 1982 BY DYNACOMP, INC.
THE ACTIVE PLAYER SCORE FILE IS BOB
PROGRAM OPTIONS:
 1 - CREATE A NEW PLAYER FILE
 2 - SET AN EXISTING PLAYER FILE TO ZERO
 3 - CHANGE OPPONENT
 4 - PLAY BRIDGE
 5 - PRESET HANDS
 6 - SCREEN INSTRUCTIONS (WIDE FORMAT)
 7 - SET TERMINAL PARAMETER (RESET FILES)
 8 - LPRINT INSTRUCTIONS (TO PRINTER)
 9 - DISPLAY LAST HAND PLAYED
10 - QUIT. YOU MUST USE THIS OPTION TO TERMINATE THE PROGRAM
     OR THE DATA FILES MAY BE DAMAGED.
ENTER SELECTION |||› ?
```

FIGURE 3
SCREEN SHOT OF ACTIVITY AFTER "PLAY BRIDGE" CHOSEN



```
ENTER A VALUE BETWEEN 0 AND 999 ? 999

PLAYING HAND #999

YOU (SOUTH) ARE THE DEALER
BOTH TEAMS VULNERABLE

SHUFFLING

DEALING
```

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. Copyright © 1987 by Robert D. Athey Jr. All rights reserved.

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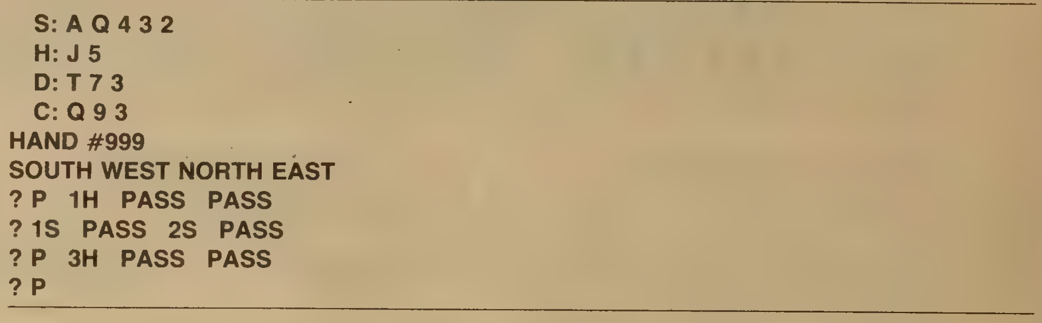
files (in SSDD machines) or to expand the SA files. These SA files are the reference files that *Alice* uses to sort through a hand and decide what to bid. Similarly, my B:disk has a set of BOB files showing her what I expect her to have when she makes a particular bid. *Alice* builds these files from the "T" teaching choice you make at the opening screen.

After you've played a few hundred hands with *Alice* in the teaching mode, she has a pretty good idea that a "One Heart" bid has 5 to 8 hearts, 0 to 3 spades, 0 to 4 clubs, 0 to 4 diamonds and 12 to 19 high card points (Goren type). I play five card major suits, but you can play four card majors, as *Alice* will learn from what you tell her. It takes about 300 hands to get *Alice* to learn to handle routine bids routinely. The Blackwood convention (an artificial bid named for the man who devised a way to ask for how many aces are in partner's hand) is already programmed in, and *Alice* can bid to slams.

The teaching mode allows you to look at each hand, in the sequence of bid; the computer will type in a bid for you to examine and change to fit your own strategy. This change modifies the bid comparison files and teaches *Alice* your own system. All the hands are bid this way, until there are three passes. You then have the option to play, bid the next hand in the number sequence, or quit.

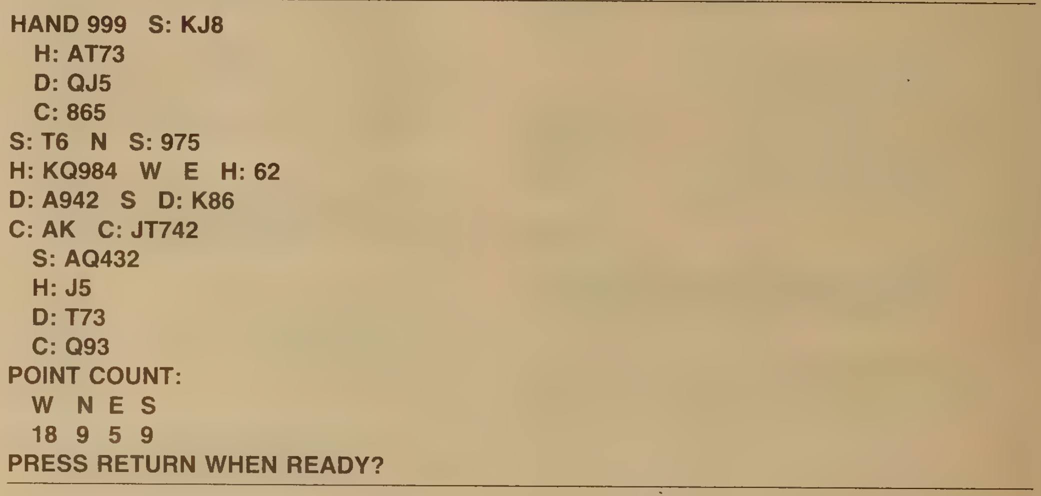
Play is according to standard rules, with one exception. The declarer's hand and the dummy are both exposed on screen for your play in either position. The lead comes from the left of the declarer, and there is no type ahead buffer, so you can enter the card only after the command to enter the card. It retains the exposed trick when all cards have been played until you hit a carriage return to start the next trick. This must be done for all thirteen tricks — a bit slow when there's no thinking to be done since you have all the high cards.

FIGURE 4
SCREEN SHOT OF BIDDING SEQUENCE



```
  S: A Q 4 3 2
  H: J 5
  D: T 7 3
  C: Q 9 3
HAND #999
SOUTH WEST NORTH EAST
? P  1H  PASS  PASS
? 1S  PASS  2S  PASS
? P  3H  PASS  PASS
? P
```

FIGURE 5
SCREEN SHOT OF HAND LAYOUT AFTER PLAY



```
HAND 999  S: KJ8
  H: AT73
  D: QJ5
  C: 865
S: T6  N  S: 975
H: KQ984  W  E  H: 62
D: A942  S  D: K86
C: AK  C: JT742
  S: AQ432
  H: J5
  D: T73
  C: Q93
POINT COUNT:
  W  N E S
  18 9  5  9
PRESS RETURN WHEN READY?
```

As Bridgemaster is a modular collection of many programs, it takes a while for each stage to be completed, during which the screen gives you Shuffling and Dealing messages.

There is one quirk of play, in that the highest card in a suit will be played most of the time by the defending or declaring computer when you've started with a low card. The computer defender will occasionally not cover a finesse play, but count on the computer to win with an Ace from Ace, Queen in last position. Computer declarer will make serious errors every once in a while, too, but also will occasionally take a finesse. However, the play does offer challenge of the thinking processes of offense and defense. An occasional error by partner in defense does limit the number of set contracts.

The program set also offers a way to modify the SA.* files or your own. The SETBID.COM program allows you to examine the bid files that have been built, so changes may be made. The documentation gives detail on finding and changing the record. I've not messed with the SETBID program, as I am already pleased with how well *Alice* has adapted to weak twos, and five card majors after several hundred hands.

Bridgemaster

The second bridge program is an offering from Dynacomp called *Bridgemaster* (a bit of an overstatement). It's a little older than the *Alice* program, and requires MBASIC to be run. Again, it comes on one disk and has a 5" x 8" paperback booklet of eight pages as the documentation. Versions are available for the Commodore PET, TRS-80, Northstar, Osborne, Apple II, Atari, and others.

Starting up in this program is simple, as it is the standard MBASIC game format. You simply type in "MBASIC MENU" and you see the menu of options we show as Figure 2 roll onto the screen. Choosing the 4 option on the menu brings up the screen we show as Figure 3. Type in a number to select a hand, and the computer will generate a file and store it under that number. There are more than the 999 hands, as you can generate a hand at 998.999, as well. There is also an option to let you enter your own hands from the game last night.

As this program is a modular collection of many programs, it takes a while for each stage to occur (even on the ON! RAMdisk!), during which time the screen shown on Figure 3 appears with Shuffling and Dealing messages. The hand then gets shown (you are always South and dealer) and the Bidding can commence, as you see on Figure 4.

Play starts as soon as the bidding is finished. The card to be entered is cued by a question mark showing where you are supposed to play it (North, if it is his turn, or South if it is yours). Again, as with *Alice*, when you are on defense, you see only your hand and the dummy, and when on offense, you see your hand and North's.

Play is slow, and flawed by the tendency to play too high a card. I've not seen this computer declarer finesse for a missing high card yet, and I've played more than a hundred hands. After playing, the options are to return to the menu or to display the hand just played (the same as option 9 on the menu). We show that display as Figure 5. We might have made two spades, but good defense beats three hearts every time as the clubs are never established until too late.

You can review how you've done against the computer, as the computer updates the games won or lost and shows the results to you after each hand. I'm averaging making about 70% of my contracts, while the computer is making only about 60%. The net difference in scores is considerable, as I play about 60% of the hands.

The main gripe I have with this program is that it is so slow. Perhaps I've been spoiled by the MS-DOS bridge programs and *Alice*, but the speed is a consequence of the need to compile and run each BASIC program module separately. Perhaps the user familiar with BASIC can convert it to a *.COM file with BASCOM, the Microsoft compiler/converter for BASIC programs.

I prefer to play the MBASIC program on the ON!, because of the RAMdisk speed up. The ON! has recently been upgraded, thanks to Woody McPheeters and Dwight Chew, who helped with my new Keycap and ROM installation replacements, which came from ONEAC about two months ago.

Etc.

Incidentally, I've written this on the new *WordStar* 4, and used "Xscreen" from Xpert Software to capture the figures for the demonstrations. The new *WordStar* has an option to print a file to disk, in ASCII form, which has no page breaks or any of the printer commands acted upon. That's really nice for putting together a compact file for modem transfer. Putting together the file with margins at columns one and 75 makes the display a bit fuller, and an editor can see a lot more of the text on the screen. ☐

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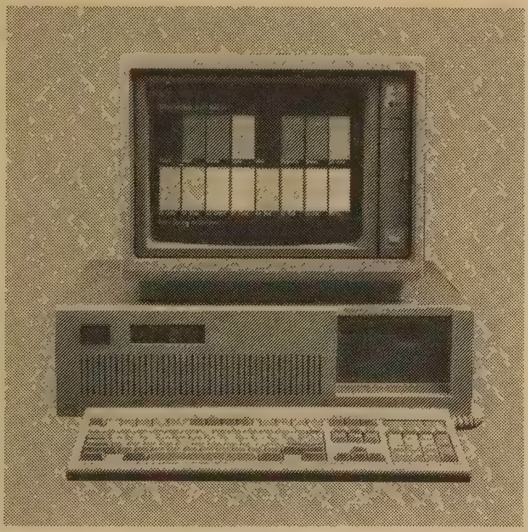

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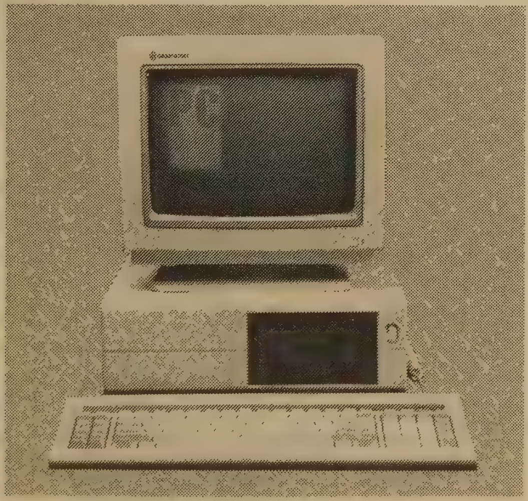

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A Period Of Transition

By Mary Eisenhart

Some of you who sent us listings recently may have noticed that said listings are conspicuous by their absence. As we said last issue, this absence will be with us until we get to our April issue, which will feature new, spiffy, up-to-date listings and be distributed at the West Coast Computer Faire. So if you've already sent us a listing within the last month, and nothing changes between now and February 1 (the deadline for new listings), you're covered. And if you haven't sent us a new listing, please do so now, because after the March issue all the existing listings will go away. And remember, if you don't want your listing subjected to the dubious mercies of axe-wielding editors, please keep it to 15 words or less.

Meanwhile, another urgent cry for help from a luckless seeker after knowledge. **Dick Gifford** of Antioch seems to recall that some years back there was a user group in San Francisco called **:BADOC** for users of the Script text-formatting language. Dick explains that Script is IBM's answer to the nroff text-formatting language in UNIX (perhaps if he's asked nicely, the intrepid **Bennett Falk** will send **Hapless User** out to consult the gurus about nroff and troff sometime). It apparently has a variant called DCF/Script (Document Composition Facility), a version of which was copied by the University of Waterloo in Canada and christened Waterloo Script. Says Dick of the vanished :BADOC, "Many Bay Area companies belonged to it, including Bank of America, Charles Schwab, and Lucky Stores. It was considered to be a corporate support group."

If any of you readers have any inspirations on this score, please give Dick a call (at a civilized hour, of course) at (415) 757-4011.

On the Orphan Computer front, mountain-dwellers who own **Dynabyte** computers (or want to sell their Dynabyte computers and move on to clone-land or something) are invited to check out the **Tahoe City Dynabyte Users Group. Walt Kass,** who sends us this notice, says that the group offers a great opportunity to swap, buy or sell boards, parts, or entire units. You can write to Walt at P.O. Drawer 2629, Olympic Valley, CA 95730, or you can also give him a call at (800) 451-3686 or (916) 583-5050.

Northern California Mac users take note: **Mac Festival '88,** a regional computer show sponsored by the **Mac Business Association,** will take place on December 13 at the Dunfey Hotel in San Mateo. Vendors will present their products, seminars will present current and future trends in Mac technology, and assorted fun stuff will also be happening, including a **Beyond Dark Castle** contest (obviously inspired by somebody who's seen the Dunfey...). For further information, call (415) 644-0516.

It's been a great month for **HyperCard** enthusiasts. On October 22, the **Berkeley Macintosh User Group** held its annual Mactoberfest, with all manner of spiffy new Macintosh products, including many for the Mac II. Featured speaker was **Bill Atkinson,** who, along with some of his programming colleagues, demonstrated some of *HyperCard*'s wondrous capabilities. Atkinson also deplored some of the hype surrounding his brainchild, saying that it was less a miraculous hypermedia implementation than an "erector set" for the construction of individual working environments.

A videotape of Atkinson's presentation was one of the guests of honor at a *HyperCard* event at **Mills College** in Oakland on November 7. *HyperCard* enthusiasts (with denizens of **The WELL** making a fine showing) gathered from far and near (well, at least as far as Santa Rosa) to show off their stackware creations and discuss the joys and aggravations of working in this new idiom.

Finally, this will probably be a little late for NoCal folks, but SoCal *HyperCard* buffs who'd like to combine a little trip to the Bay Area with biz might be interested: the **Software Entrepreneurs' Forum,** who you may remember from an article in the very recent past, is holding a **HyperCard Developers' Seminar** on November 21. If you'd like to register, or just want more information, you are cordially invited to call (415) 854-7219.

Also on the Mac front, **Ruth Stever** of **MacValley** invites all and sundry to check out the group's December 15 meeting, where hardware and software vendors will gather for MacValley's annual **Holiday Vendor Faire.** If you'd like to be in on this, give Ruth a call at (818) 848-1277.

If you're planning an extended stay in Europe with your computer, you might want to write to **ACUTE, American Computer Users Temporarily in Europe.** They'll help you deal with culture shock and the considerable variety of electrical situations you're likely to encounter, as well as more specialized problems. You can reach them at Postfach 4, D-8818 Lehrberg, West Germany.

Loyd Cribbs, a faithful correspondent from the **San Francisco PC Users Group,** has kindly sent us advance notice of the group's upcoming activities. The December 21 meeting will feature a presentation from **Carrie O'Loughlin** of **Brøderbund Software,** who will discuss *ForComment* and PC programs currently being developed. At the January 18 meeting, **Jim Button** of Buttonware, a leading shareware house, will speak on the distribution and marketing of shareware. And if you'd like to know about the group's other plans and activities, call its 24-hour hotline at (415) 221-9166 for a recorded message, or alternatively call the SFPCUG BBS at (415) 621-2609.

There's even more good news for users of **Ventura Publisher,** especially if they happen to live anywhere near the company's headquarters in Morgan Hill. **VPUG,** the **Ventura Publisher User's Group,** meets on the third Wednesday of the month in the Xerox Building at 475 Oakmead Parkway, and the next meeting's on December 16 at 6 pm. This is the only user group officially recognized by Xerox and Ventura Software; in return for your $24 a year, you get a monthly newsletter, all the valuable contacts of monthly meetings, and access to the VPUG-SIG, now under construction on CompuServe. If you're in the area and want to check out the club, its address is 16160 Caputo Drive, Morgan Hill, CA 95037. And if you're not in the area but would like information on other local VPUG chapters call (408) 778-1125.

The **DataEase User's Group** for the San Francisco Bay Area held its first meeting on September 23, with discussion of LANs, graphics, and the ever-popular stump-the-panel session for those really exotic problems. If you're a DataEase user, you too can avail yourself of this group's services; call (415) 954-8508 for more info.

That'll do it for this month. Remember, keep those new listings coming in and don't panic when you don't see them for a couple of months. All good things in all good time, as a wise man once said. Send Snail Mail to 5951 Canning Street, Oakland, CA 94609, and email to **microx** on The WELL, (415) 332-6106. As ever, thanks. ☐

BULLETIN BOARDS

065

Remote Bulletin Board. (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

The Board Of Review. (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss..

28 Barbary Lane. (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.

209

Region 7 TEC Center BBS. (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

Inn Finity BBS. (209) 521-6240. Inn Finity is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

Bullseye BBS. Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

The Spotlight BBS. (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

Bertha Board. (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

Motherload-64 BBS. (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

305

Miami PC Users Group BBS. (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

Miami's Big Apple. (305) 948-8000. 300/1200 baud, 24 hours. Online Apple users group with heavy Apple support. PC Pursuitable. In seventh year of operation. Sysop: Bob Sherman.

312

Feminist BBS. (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

408

Atari Base BBS (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

Byte Bandits ColossusNet. (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

Bizcomp BBS. Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modem technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

Non-Smokers BBS. (408) 298-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

Home Board (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

Board III (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

ADV in Lrn (408) 247-4769.

The CATS BBS (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. Online tutorial of PC typesetting, public message bases, 300 baud only.

Sailors Refuge (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. Sigs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all Sigs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

Bulletin Board Hewlett-Packard BBS. Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

The Man O'War, (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

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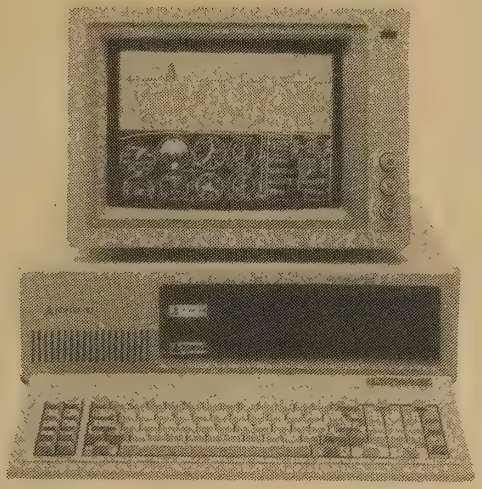

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Digikron Systems (ZNode 25). (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity. 24 hours/7 days. Sysop: Douglas Thom.

Hotel California. (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

The Flying Fido. Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

Association of Apple 32 Users BBS. (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

Sofia System. (408) 244-5055. 300 baud, 24 hours, BBS protocol. Conversations and e-mail. Ten lines of multi-user interaction. Netowrked nationally. Sysop: S.W. Heissain.

Matchmaker San Jose. (408) 249-4566, 300/1200 baud, 24 hours, 7 days, 4 lines in hunting. 300 plus calls a day. Matchmaker San Jose is the ultimate pen pal system. Make a date, meet a friend, have the time of your life. Nationally networked. Type "mm" at login. Sysop: The Matchmaker.

Dragon Flight. (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. Online quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

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Public Domain Software Special Interest Group (PDS-SIG) BBS. San Jose, CA. (408) 270-4085/4086, 8-N-1, 1200/2400 baud, 3 nodes, 24 hours. Features over 175 meg of up to date public domain shareware and supported software. Over 25 meg of games, 53 multi-topic directories, 5 mini-BBS conferences: Focal Sysop, Chat, Software Technical and the famous THE-BOG. Registration required. Annual membership available with extensive privileges and free software. Find the latest and most popular programs and shareware in our vast library of files. Second to none.

The Snake Pit BBS. (408) 266-5895, 300/1200, full duplex, 8 bits, no parity, 1 stop, 24 hours. Commodore ul/dl.

WYRLD WYRM BBS. Role-playing games, computer games, and science fiction. Open access, everyone is welcome. FidoNet node 143/12. 9 am- 6 pm weekdays, 10:30 pm-6 am every night. 300/1200 baud. Robert Plamandon, sysop. (408) 263-8134.

Tele-Play. (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

Consumers BBS and Insurance Center, Sunnyvale. (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nations's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

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Bay Area Bulletin Board. (408) 723-7238. 24 hours, world wide net mail, 66 megs of online programs for download, adult message area, several special interest areas. 8-N-1, 300/1200/2400 baud. Sysop: Jim Acker.

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Computer Tyme-NUG-SV. (408) 732-2353. 300/1200/2400 baud, 8-N-1, 24 hours. Sysop: Gary Araki.

Gino's. (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

The PET Sematary. (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

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INTEREX User BBS. (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/suggestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

Comp-U-Ease BBS. (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. PC Board utilities. Sysops: Stuart Smith and Eric Smith.

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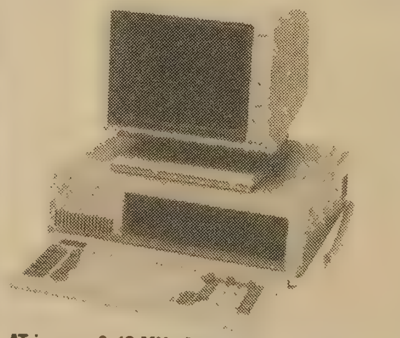

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Enter Computer SP-1000 A-D, 24 IPS, HP-GL, single pen	$3,995
Enter Computer SP-1200 A-E size, single-pen DM/PL IV	$4,495
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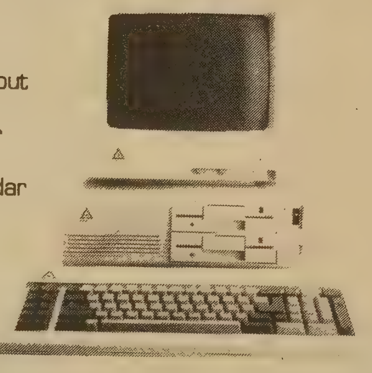

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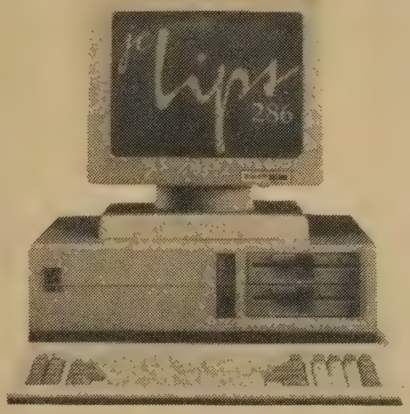

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The Nimitz DownPort. (415) 276-3677. 8-N-1, 24 hours, 7 days, 300/1200 baud. Commodore only board. The Nimitz DownPort offers a wide variety of message bases including Adult. With a BBS that has parties, educational offerings, discussions with nationally- and locally-known "geniuses" and experts, and "hands-on" role-playing games, there is no reason not to dock here. Call today and be a part of tomorrow. Sysops: Lady Godiva and Portmaster Kevin Munrow.

California ConneXion Party-line. (415) 927-2739. 8-N-1, 300/1200/2400, 24 hours. Member of BayOps. An adult oriented multi-user, multi-interest system featuring matchmaking, 20+ public message boards, on-line chat with other users, questionnaires upload/download library, pictures, private E-Mail and more! Extremely fast system running on an IBM/AT at 9.5 mhz with 70 megs of storage and 9 lines on a rotary. Registration required! Sysop: Alan.

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The Wizard Net. (415) 481-8413 San Leandro; (415) 232-6981 San Pablo. Full duplex, 1 stop bit, no parity, 6 am-6pm M-F, 24 hours weekends, 300/1200 baud. A user friendly system that utilizes Commodore color graphics. The more time that you put into the system the more you will be able to get out of it. System has bulletin boards, e-mail, voting booth, a chat feature, ul/dl, and online games. There are no fees, and everyone is welcome. Registration required. Sysops: Dave Rasmussen, Keith Parrish, Olivia Parrish.

AI-NET. Public OPUS board with 20 MB of files. Echo newsgroups for dBASE, Technical Forum, Mainframe Forum, Software Evaluation, Buy/Sell, National Mail, and more. Available between 3 am and 11:30 pm daily. 300/1200 settings: 8-N-1. 125/125 in the Matrix. (415) 776-6628.

SFPCjr UG BBS. (415) 997-4874. Sponsored by the SF PCjr User Group. 1200 baud, 8-N-1, 24 hours. Sysop: Larry Buoncristiani.

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Trading Post BBS. Information Exchange system, (415) 948-4163. Open system with more than 20 discussion groups covering everything from Atari to ZCPR3. Online games and 200+ articles. Free. Sysop: Lars Rosengreen, a.k.a. Eskimo.

SPACE-The Stanford Palo Alto Computer Exchange. A BBS for PC professionals and power users. Validation required. (415) 964-9039, multi-node, 2400/1200 baud, N/8/1, 24 hours. Sysop: Jay Fox.

Production World On-Line. (415) 571-6160, 300/1200/2400 baudd, 24-hours. An additional service from **Production World On-Paper**, a printed publication for the motion picture film, broadcast television, video and audio communities featuring Northern California people and facilities. A variety of information and message bases available. Sysop: Wes Dorman.

Amiga Addicts Anonymous BBS. (415) 222-9416/9148 "BUDLINX." 24-hours, Xmodem, 300/1200 baud, N/8/1. Sysop: Randy Spencer.

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The Guardian. (415) 644-6806. The Berkeley Police Department's public relations and community service bulletin board. Lists crime prevention information including neighborhood and business watches, crime statistics and recent press releases. Community organizations are encouraged to call and post events. Everyone invited, you need not be a Berkeley citizen. 24-hours, 7 days a week, 300/1200 baud. Sysop: Officer Carl Orsi.

Commodore Connection BBS. (415) 458-1005. 1 stop bit, no parity, 7 or 8 bit word, 300/1200 baud, 24-hours. Sysop: Clint Beers.

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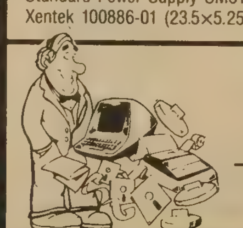

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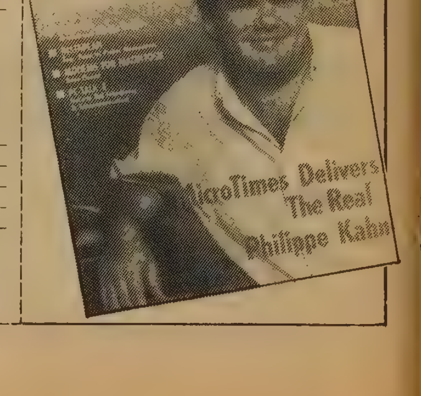

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GLEAN's BBS. (415) 441-7613. 300/1200 baud, 8-N-1, 24 hours, 7 days. Information about the National March on Washington for Lesbian and Gay Rights. Transportation, housing, calendar of events, contact numbers, etc.

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SFPC User Group BBS. 1200/2400 baud, 8-N-1, 24 hours. IBM and compatibles, technically oriented. No fee. Sysop: Richard Couture.

Army of the Elite BBS. (415) 491-4215. 300/1200 baud, 8-N-1, 24 hours. Mainly for Atari and Commodore but all systems are welcome. No fee. Sysops: SilverStorm III and Dalamar.

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Sony Multiscan TV/Monitor KV1311CR	$499
Magnavox Color RGB CM-643	$299
Samsung 12" Amber TTL	$89
LTI 12" Amber TTL	$79
NEC Multisync JC-1401P3A	$550
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Taxan Color 760-14"	$549
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Roland DXY-885	$1225
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Novell 286A Server 42MB w/software	$6370
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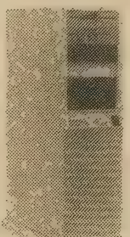
386 SYSTEM

386 Tower



Special 1: Intel SBC-386 AT motherboard, desktop cabinet, floppy drive, keyboard, Western Digital dual controller $2850

Special 3: Taiwan 386 motherboard (similar to Intel SBC-386AT) desktop cabinet, floppy drive, keyboard, Western Digital dual controller $2450

Special 4: Taiwan motherboard, package similar to Special 3, except tower cabinet $2850

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Taiwan 8 MByte 32-bit RAM board	$2450
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Intel SBC-386AT motherboard has 90 days factory warranty.
Taiwan 386 motherboard has 1 year factory warranty.

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	6085	80M, 28 MS	**870**
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CDC	6086	73M, 28MS	**1045**
	6101	85M, 16MS	**1595**
	6182	160M, 16MS	**1795**
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WHAT'S HAPPENING?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.

allow. Registration unecessary but nice. We're new and growing! Give us a call, we'd love to hear from you! Sysop: Uncle Tim Beckwith.

Softy's Apple BBS. (916) 383-5244. 300/1200 baud, 8-N-1, 24 hours. An Apple BBS with a technical theme. We have boards for IBM as well. Retail store advertising with discounts for users of this BBS. Sysop: John Hagen.

TREE. (916) 332-4930. 300/1200 baud, 24 hours. Unique tree-structured BBS lets users create their own topics and floors in virtually unlimited quantities. Blazing fast and large, this BBS is one of a kind in its software, hardware and management. Includes the multiplayer game BATTLE, where users fight each other for supremacy on the high seas.

The Capitol Connection. (916) 442-0746. 300/1200 baud, 24 hours, 7 bits, even parity, 1 stop bit. The state's first policy-oriented interactive computer bulletin board. Established to test how computer communications can involve citizens in the process of governance. Participants may access over 15 "conferences" listing legislative data, information about the Legislature and the Public Utilities Commission, and other particulars; or they may enter comments and opinions regarding current regulatory issues and debates on the place of computers in civic life. Participants may also send each other electronic mail and download press releases dealing with topical events.

Dynasty BBS. (916) 685-8690. 300/1200/2400 baud, 8-N-1, 24 hours. ComputerRooters Bulletin Board. Sysop: Henry Hoover.

The City Of Grey. (916) 423-3987. 300/1200 baud, 24 hours. Atari 8 bit BBS. Sysop: The Sheriff.

CoCo BBS. (916) 486-1594. 300 baud, 7-E-1, 24 hours. Sysop: Bill Drennon.

ASSOCIATIONS

Community Entrepreneurs Organization (CEO). Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

Computer Professionals For Social Responsibility. P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

Computer Professionals For Social Responsibility (East Bay). 902 Rose Ave., Piedmont, CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

FOCUS-MED (Federation of Computer Users in Medicine). Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

FOCUS-DDS (Federation of Computer Users in Dentistry). Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

ITRA Independent Technical Representative Association is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

MCTUG (formerly Marin County TRS-80 Users' Group). MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

PRACSA (Public Remote Access Computer Standards Association) offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

San Bruno Computer Core. Meets Wednesdays at 7:30 pm. Call Pete at (415) 952-9309 for address and info.

San Francisco Computer Society (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues $10/yr.

Software Entrepreneurs' Forum, PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

PATCA (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

BAYMUG. Bay Area Micro-Processor User Group. General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

Byte Hum. A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

Society for Technical Communication. STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-8:00 pm; call Sarah Collings, (415) 383-9631 for info or write to P.O. Box 2706, San Francisco, CA 94126.

North Bay Users Group (NBUG). Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

Robotics Society of America. Dedicated to disseminating information about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564.

Silicon Valley Computer Society. Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

PicoNet. A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call

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(408) 374-8090 for recorded message on next meeting's topic.

MicroPsy. Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

C Group of Northern California. Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

BADGE-Bay Area Developers Group. Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

California Genealogical Society Computer Interest Group. Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call Bill West (415) 235-6107 for information.

Hebrew Users Group., Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793. Newsletter: $7.50/4 issues ($15/institutions). Write: HUG, c/o Berkeley Hillel, 2736 Bancroft Way, Berkeley, CA 74704.

Gay/Lesbian PC Users Group. We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

ComputerRooters. ComputerRooters' purpose is to foster the science of genealogy through educational and research programs. Among other things we show how you can use your computer to further genealogical research. Our library of computer diskettes ranges from useful public utility programs to shareware genealogy programs and is constantly being expanded. Contact Maxine Roberts at P.O. Box 161693, Sacramento, CA 95816. BBS: (916) 685-8690 (Dynasty BBS). 300/1200/2400 baud, 8-N-1, 24 hours.

International Interactive Communications Society (IICS). San Francisco Bay Area Chapter meets the second Tuesday of each month. Meetings alternate between San Francisco and Mountain View. National Office: 2120 Steiner St. San Francisco, CA 94115. (415) 922-0214. San Francisco Bay Area Chapter: P.O. Box 1372, San Carlos, CA 94070. Hot Line: (415) 328-7318.

Bay Area Automated Mapping Assoc. (BAAMA). An association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur on odd numbered months at various locations throughout the great bay area. P.O. Box 1427, Mill Valley, CA 94942. Contact Jake Armstrong, 1195 Third Street, Room 125, Napa, CA 94558. (707) 253-4351.

NFL-FOOTBALL: Free Open Organization To Better All League Logistics. New power algorithm to develop. Open to all. A bulletin board to go on line on Sept. 13, 1987. Will improve your understanding of the finer points of football performance. Meet once a month to get things started. Join a team research group. Opportunity to brush up on your programming skills, amateur or professional. Call the Construction factory for more information. Or send SASE for full particulars. The Construction Factory, 115 Aspen Drive, Pacheco, CA 94553. (415) 685-9366 or (415) 432-4526.

tecNICA. tecNICA volunteers donate two or more weeks of their time to support Nicaragua with their computer, engineering or other skills. Contact David Greighton, 2727 College Avenue, Berkeley, CA 94705. (415) 848-0292.

AI-Expert System for Business (ESB). Meets 1st and 2nd Sunday in San Francisco. "Investigate real business PC expert system solutions. Determine market opportunities. Guest speakers, discussions and group research/projects. BBS access soon. Quarterly newsletter. Beginners and businesses welcome. Call George Polzer (415) 564-6664 for more information.

Professional Association of Secretarial/Word Processing Services (PASS). A non-profit organization of word processing owners (including home-based services). Dedicated to promoting and maintaining quality and professionalism within the trade. Also provides a network of contacts and a spirit of cooperation. Contact Nina Feldman at 655-4296.

USER GROUPS

APL

APLBUG (APL Bay Area Users' Group) has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are $15. Contact Curtis Jones, (408) 292-4060, for information.

AT&T

Bay Area AT&T PC6300 Users' Group. Demos, technical help and more. Meeting time and location varies. Contact Joe Mahoney (415) 586-8376 or Maurice Aranda, (415) 972-5436.

ACTRIX

ACTRIX Computer Enthusiast Society. Membership ($20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

ADAM

Coleco Adam Users Group. For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

South Bay ADAM Users' Group. Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

East Bay ADAM Group. Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

AMIGA

First Amiga User Group. We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address 1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejooh, (415) 595-5452.

First Amiga User Group the South Bay. End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

Sacramento Amiga Computer Club (SACC). Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

Amiga East Bay Info Exchange (AEBIE). P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

AD-Amiga Developers Group. Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

AEBUG-Amiga East Bay User Group. The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley; 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

AUGment, the Amiga User's Group of Silicon Valley. Meets every second Friday, 7:30 pm, at Milpitas City Library, 40 North Milpitas Blvd., Milpitas. Video Production, C programming, and hardware SIGs. Contact Jim Thomas, P.O. Box 1863, Fremont, CA 94538-0186. (415) 651-1160. BBS: (415) 659-9169.

Amiga Addicts Anonymous. Meets the fourth Tuesday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. Q&A session begins at 7:00 pm. For more into, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

AUM-Amiga Users of Marin. Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

Stockton - Modesto Amiga Users Group (SMAUG). Meets last Wednesday of each month at 3525 Benjamin Holt Drive, Central Lounge, Willow Glen Apts., Stockton, 7:30pm. For information call Rainer Kummerle. (209) 957-8620.

ASCITEC: The Amiga Science and Technology Users Group. Meets second Thursday, 5:00-7:00 pm, at Lockheed in Sunnyvale, B/147, Room 4-C. Scientific/Video Applications. P.O. Box 201, Los Altos, CA 94023. (408) 742-9110.

San Francisco Commodore User Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstrations, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Northern California Amiga Club. Meets 2nd Saturday of the month at 2:00 pm. Contact David L. Murphy at (916) 472-3237 for meeting place or write P.O. Box 54, Bella Vista, CA 96008.

APPLE

San Francisco Apple Core Special Interest Groups, BBS, large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

The AppleWorks Users Group. c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

SPCA (Society For The Prevention of Cruelty To Apples) Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize

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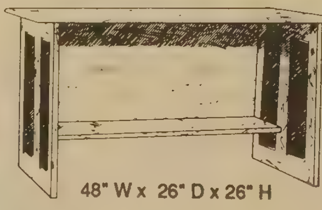

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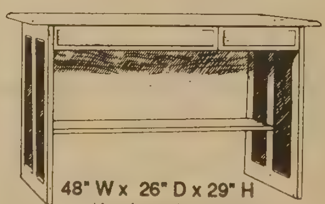

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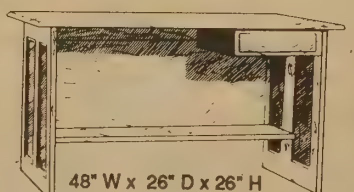

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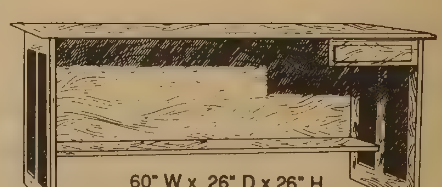

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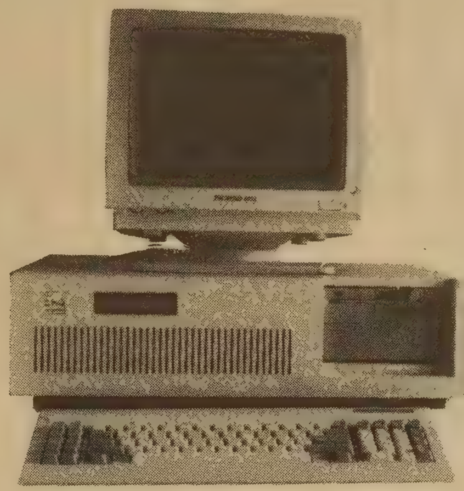

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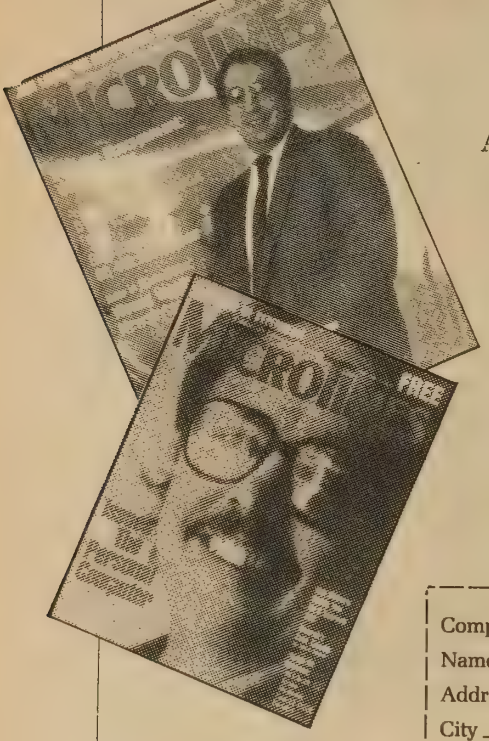

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hard / software, demonstrations, lectures, discussions, $20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

Association of Apple 32 Users Macintosh, Lisa. An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

San Leandro Apple Eaters Users Group. Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

Pen-Apple (Peninsula Apple Users Group) Meetings 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

Diablo Valley Apple Users. Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

South Peninsula Apple Computer Enthusiasts (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

Roseville Apple Core. Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just $12 yearly membership. C'mon out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 94551. (916) 723-6422.

Apple Sac. (Sacramento) Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

Stanislaus Apple Group. You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

Santa Cruz Apple User's Group meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

Apple Gardens. New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

Apple P.I.E. Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

ATUNC-Apple Three Users of Northern California. Explanations, demos, large public domain library. Mailing address: P.O. Box 1528, Mill Valley, CA 94942. On Apex and Draconet BBSs.

Apple East Bay Users. Meets the first Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

Apple Pickers of Sonoma County. Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

TVAUG-Tri Valley Apple II User's Group. Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special Appleworks group meets on the second Thursday of each month. For more info, contact Dan Balsley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

Apple Blossom User Group. Meets 1st and 3rd Wednesday of each month at 7 pm at 290 International Circle, San Jose CA 95119. All Apple users welcome. Apple II, II+, IIc, IIe, III and Macintosh. No matter which Apple you have we have a group for you. Contact Ray Enochs, P.O. Box 53323, San Jose CA 95153. (408) 723-9141. ABUG BBS (408) 227-3993.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

ASHTON-TATE

Framework/Editor Bay Area Users Group (FREDBUG) Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

San Francisco dBase User Group For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

East Bay dBASE Users Group. Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

dBase II/III SIG of SF PC Users Group meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

DBDVLPRS (dBaseIII Program Developers). Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

ATARI

ABACUS (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership ($15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month at 19th Ave. Diner, 19th and Lincoln Avenues, S.F. Call for times. Contact Bill Zinn at 753-8483.

A.C.M.E. (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

Diablo Valley Atari Computer Enthusiasts (D.A.C.E.) Meets the first Thrusday of the month

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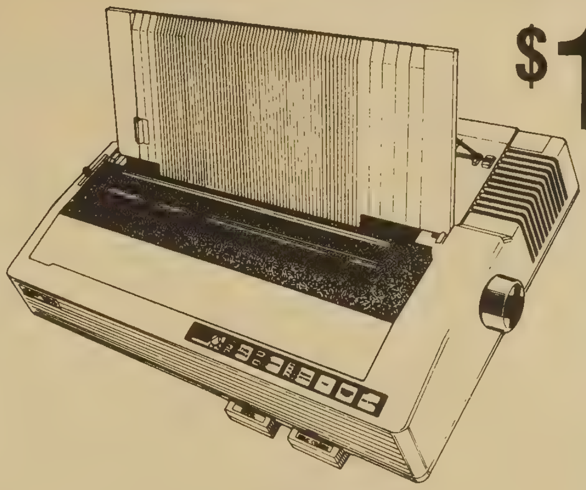

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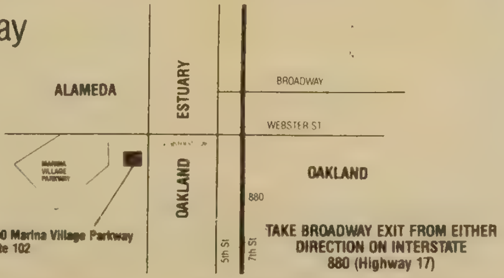

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at 7:00pm at the Contra Costa Water District Building conference room in Concord. Meetings free. $20 yearly membership comes with newsletter, discounts, raffle tickets. For information contact Mike at (415) 798-6565.

Bay Area Atari Users Group We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

San Leandro Computer Club Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

COAST User Group (California Original Atari ST). Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. $1.00 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues $30.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

Redwood Atari Group (R.A.G.) Meets 4th Saturday, 1-4 pm, at Coddingtown Meeting Room, 1100-B Coddingtown Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

E.S.C.A.P.E. (Enthusiastic Santa Cruz Atari Programmers Exchange). Full software and hardware support of both the ST and 8-bit computers. For information call Chris Smart at (408) 335-4384.

ATTACHE

Attache UNL Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

First Attache User Group News. Support, news, and cooperation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, Ca 94117, (415) 221-3415.

AUTOCAD

AutoCAD Users Group. Call Gen Katz (415) 530-8870 for information about future meetings.

AutoCAD User Group. Call Volker Ackermann, (415) 331-9466 for information.

AutoCAD Users Group of Santa Cruz. Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

BASIS

Bay BUG Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhardt, 536 Mission, San Francisco or call (415) 221-0262 for more information.

BONDWELL

Bondwell Users Unite! Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

BPI

Bay Area BPI Users Group meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

CANNON

Cannon AS 100. Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

CASIO

Casio Research Project. Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

CCS DESIGNER

CCS Designer CAD User Group. CCS Designer user group forming. All those interested call (415) 692-7250.

COMMODORE

San Francisco Commodore Users Group (SFCUG). Meets the last Thursday of each month, 7:30 pm, at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstration, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

Diablo Valley Commodore Users Group Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 686-4049 for more info.

Napa Valley Commodore Computer Club Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

Lake County Commodore Users Group Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

Marin Commodore Club Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

The Commodore Connection User Group. (CCUG) Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxely, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005, Commodore only, 24 hours, 300/1200.

Commodore User's Group of Hayward. For information write P.O. Box 2072, San Leandro, CA 94577.

NBUG (North Bay Users Group). Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

Santa Rosa Commodore Users Group. Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

Family Roots Searchers. Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Silicon Valley Commodore Computer Club. Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

ACCESS. The Amiga and Commodore Computer EnthusiastS Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

C.O.W. Commodore Owners Workshop. Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

Fairfield Commodore User Group. Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

FUNHUG — Fremont, Union City, Newark, Hayward Users Group. A user organized, user operated, user group not affiliated with any computer or software manufacturer or distributor. We have a Commodore and an IBM section in our group. Group meets every third Wednesday at 7:30 at 5445 Central Ave., Suite 4, Newark.

64/MORE, San Jose Chapter. Meets the first Sunday of each month from 6 pm to 9 pm at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, North Valley Chapter. Meets the second Saturday of each month from 10 am to noon at the Milpitas Public Library, 40 Milpitas Boulevard, Milpitas. For information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Cupertino Chapter. Meets the third Saturday of each month from 3 pm to 6 pm at the Saratoga Public Library, 13650 Saratoga Avenue, Saratoga. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

64/MORE, Campbell Chapter. Meets the fourth Tuesday of each month from 6:30 pm to 9:30 pm at the Santa Clara County Public Health Building, 2220 Moorpark Avenue, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

CO-OP: Commodore Owners of the Peninsula. Meets third Saturday of the month, 1:00-4:00 pm, at the Foster City Recreation Center, Room 103, 650 Shell Blvd., (corner of E. Hillsdale Blvd.), Foster City, CA 94404. Membership $25/year. Non-members, $2/meeting. Contact P.O. Box 280495, San Francisco, CA 94128. (415) 595-8770.

CLIPPER

Bay Area Clipper User Group. The newly formed BACUG is the only user group in Northern California affiliated with Nantucket, developers of Clipper. It will operate as a SIG of the San Francisco PC Users Group. All persons interested are invited to attend the meetings. Entry is free to BACUG members; guests will be charged $5. For meeting times and locations contact Mike Pelladino at (415) 751-2719.

COMPAQ

SF Compaq Users Group is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

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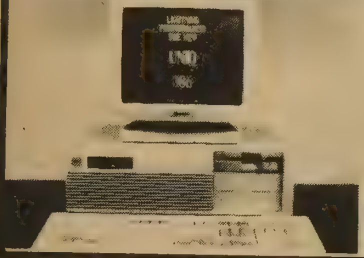

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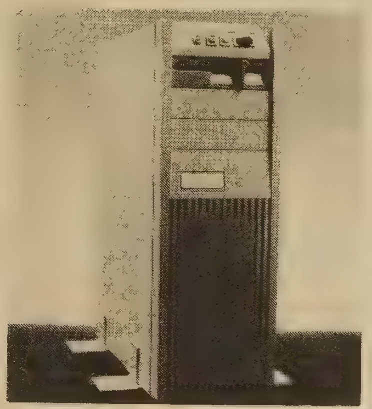

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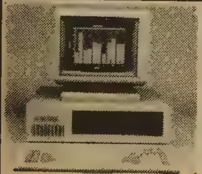

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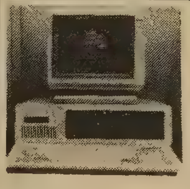

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- 640 KB on Board
- 2 360KB Floppy Drives
- Parallel, Serial, Clock, Game
- AT Style Keyboard
- 8 Slots Slide in Case, w/Power Supply
- Monographic Card
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- One Year Warranty

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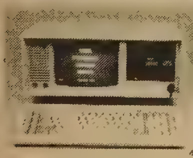

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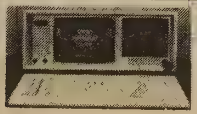

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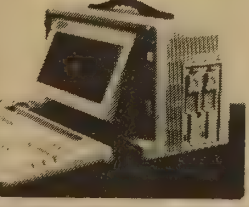

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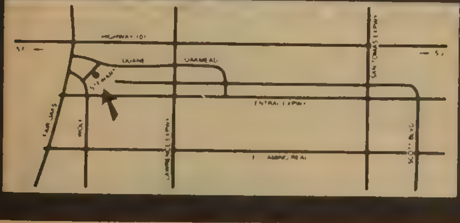

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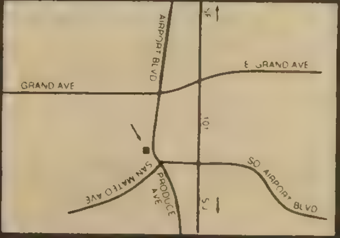


COMPUPRO

Berkeley Compupro. Berkeley Compupro User Group meets 4th Thursday every other month. Company Reps attend meetings. For more information call Barry at (415) 665-4733.

Hayward Compupro Users Group. Meets 3rd Saturday of every month in Hayward, California. Sponsored by Automation Sciences International. Meetings held at 22532 Foothill Blvd., Hayward, between 'B' and 'A' Streets. You may call (voice) (415) 886-2980 or (modem) (415) 886-4734. The CP/M Connection for further information." Topics include: hardware & software problem identification and solution, upgrades, new products, CP/M, CCP/M, ZCPR and getting the most out of application software. Other users and interested parties are welcome. Group founder: Michael D. Lipshutz.

COMPUTER ASSOCIATES

Computer Associates Users Group of Northern California. Meets third Wednesday of every other month, 6:00-7:30 pm, at the Slovenian Hall, 2101 Mariposa Street, San Francisco. For local Computer Associates Software users looking for extended support. Sponsored by J.C. Lukrich & Co. Contact Beth E. Markus (415) 864-6770.

DATAFLEX

Dataflex User Group. For more information call Alex at (415) 433-7944.

DEC

Silicon Valley DEC PC Users Group. Meets 2nd Wednesdays 7–9 pm at Kierulff Systems 1180 Murphy Avenue, San Jose. Contact Gary Catalano (408) 275-1133.

DYNABYTE

Dynabyte Announcing M.A.D., Mutual Assistance, Dynabyters (Dinosaurians?) For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

EAGLE

Eagle Computer Users Group. P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

Screaming Eagles User Group For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. $10/year individual, $20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

Eagle Computer Users Group —ECUG. Meets 2nd Mondays, 7 pm, 6132—66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

ENABLE

ENABLE Users' Group. Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

EPSON

Epson Users of San Francisco Bay Area Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdocs and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

Napa Valley Epson Users Group 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

FORTH

FORTH Interest Group, Berkeley Chapter. Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

FORTH Interest Group, Monterey/Salinas Chapter. Contact Bud Devins, (408) 633-3253.

FORTH Interest Group, Sacramento Chapter. Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

FORTH Interest Group, Bay Area Chapter. Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

FORTH Interest Group, Stockton chapter. Contact Doug Dillon (209) 931-2448.

GAVILAN

Gavilan User Group. Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Sunnyvale, CA. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

HEATHKIT

San Jose Heathkit Users Group. Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

HEWLETT-PACKARD

Bay CHHU, HP Laptop & Handhelds. Meets 2nd Saturday of the month. Contact Jim Horn (707) 523-4890 or Michael Felsenstein (415) 564-8279.

INTEREX is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

IBM

South County PC Users Group Meetings held second Thursday of each month at St. Clements School Library, 730 Calhoun St., Hayward. Public Domain and shareware disks, newsletter. Contact Bob McCloud (415) 537-9899.

Silicon Valley Computer Society. New users SIG, 7:30 pm, 2nd Wednesday at Hewlett-Packard Co., Bldg. 50, 5301 Stevens Creek Blvd.; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

California PC LAN Users Group, 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

Diablo Valley PC. An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

The Bay Area Computer Society Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.

IBM PC Users Group of the Redwoods. Meets on the second Thursday of the month, 7:00 pm, at Santa Rosa Veterans Memorial Bldg. Anyone interested in PCs and/or compatibles is welcome. Contact Michael Adams, P.O. Box 1009, Rohnert Park, CA 94928. (707) 664-8320. BBS (707) 546-4938.

Sacramento PC Users Group. Over 1000 members. Meetings at Holiday Inn Holidome, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

SF PC jr User Group meets monthly. Lectures and discussions on the usage of IBM PC jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

San Francisco PC Users Group. Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, $30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

Monterey Bay PCjr Users Group. Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

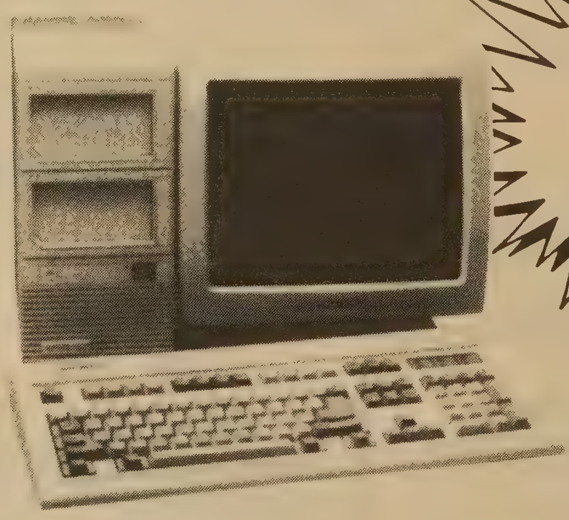
Valley PC Users Group. Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

FUNHUG PC—Fremont, Union City, Newark, Hayward User Group. For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at the Fremont Main Library, 39770 Paseo Padre, Fremont, CA at 7:30 pm. We have software/hardware demonstrations and visits from manufacturers. Our library contains over 350 disks of public domain software. There are no dues, beginners are always welcome. For more info and map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

Marin-Sonoma PC Users Group. Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

Santa Cruz Computer Society. Meets on the third Thursday of the month, 7:00 pm, at Center 2000, 2nd floor of the Palomar Hotel, 1344 Pacific Ave., Santa Cruz. For beginning to advanced users and programmers. Demos, reviews, solutions and classes on commercial, shareware and public domain programs. Spe-

PAC 286



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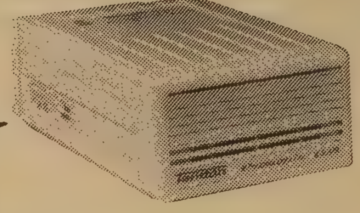

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cial Interest Groups. Contact Kasandra Fox (408) 425-1494.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

IBM Compatible User Group of Silicon Valley. Meets monthly to share information about IBM compatible or clone computers. BBS (408)287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

Berkeley P.C. Users Group. Meets on the 2nd Monday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

IBM AT/XT Clone Users Group. Meets second Monday of every month, 7:00-9:00 pm, at Bldg. 'E', room 287, Fort Mason Center in San Francisco. $25 annual membership includes newsletter. Group focuses on clone hardware and support. Contact Philip James, P.O. Box 15000/324, San Francisco, CA 94115. Voice: 861-9321. BBS: (415) 552-9070.

Mid-Peninsula IBM PC Club. For IBM employees only. Contact George Halle (415) 855-3474 or Scott Maiden (415) 855-4509.

SACTO PCjr Group. Meets on the 4th Tuesday of each month at SMUD Bldg., 59th and Folsom Blvd., Sacramento, at 7:15pm.

CADVANTAGE - Cadvance Users Group. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/22/87, 10/21/87, 1/20/88, 7:00pm to 10:00pm. PC CADD for architectural/facility designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

BAYPUG-Bay Area P-CAD Users Group. Meets P-CAD 1290 Parkmoor, San Jose. 7/30/87, 10/29/87, 1/28/88, 9:00am to 1:00pm. PC CADD for PCB/CAE Designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

The Blacksmiths-ANVIL 1000 MD Users. Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/15/87, 10/14/87, 1/13/88, 7:00pm to 10:00pm. PC CADD for Mechanical Drafting and Engineering designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

Stanford/Palo Alto PC Users Group. Meets last Wednesday of the month at 8:00 pm, Polya Hall, Turing Auditorium (Room 111), Stanford.

The IBM & Compatibles User Group (ICUG). A mail based group which has a monthly newsletter. Not for PCjrs. Large public domain software library, with great bargains. Members communicate through newsletter. $5.00/yr. fee. It's Worth It! Contact Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

Monterey Bay User Group IBM-PC (MBUG). Meets third Thursday of the month, 7:00 pm, at Seaside Library, 550 Harcourt Ave., Seaside, CA. Also Special Interest Groups meet every Wednesday, 7:00 pm, at 542 Archer St., Monterey, CA. A writer's SIG meets on the fourth Thursday of the month, 7:00 pm, at the Monterey Public Library, 625 Pacific St., Monterey. We have a large shareware library, annual auction and Christmas party. Contact Fred Brownell at (408) 373-6345.

KAYFUN: Peninsula Computer Club. Meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Supporting the MS-DOS & CP/M communities. Bimonthly newsletter, large CP/M and MS-DOS public domain libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

East Bay Users Group (EBUG). IBM, compatibles and clones. Meets 3rd Wednesday of the month (except August) at Merritt College Staff Lounge (R-7) Computer Lab, Merritt College, 12500 Campus Drive, Oakland 94619. Call (415) 436-2453 for more information.

KAYPRO

BAKUP (Bay Area Kaypro Users and Programmers). One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:15 pm, at 846 Masonic, Albany, CA. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, $10 per year to join. Contact Woody McPheeters. P.O. Box 20181, Oakland, CA 94620. (415) 548-3126. BBS: (415) 849-9389.

KAYFUN Peninsula Kaypro Users Group meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., #310, San Carlos. Bimonthly newsletter, large CP/M and MS-DOS public domain software libraries, and computer publication library. See BBS listing for KAYFUN BBS. Contact Larry Welling at (415) 593-9981.

South Bay Kaypro Users Group (SBKUG). Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

HAYPROS. Kaypro User's Group—informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

LEADING EDGE

Ventura County Leading Edge User Group. Meets 2nd Saturday of the month, 10:00 am, at Camerillo Library, 3100 Ponderosa Drive, Camarillo, CA. Contact Walt Yates at (805) 983-2199 for information.

MACINTOSH

EBMUG (East Bay Macintosh User's Group) Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

Bay Area MacForum New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events information call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

Berkeley Macintosh User Group (BMUG). 1442A Walnut St., #62, Berkeley, CA 94709. General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall on UCB campus. SIG meetings on Mondays, Tuesdays and Wednesdays. Call for more info and this week's topic. (415) 849-9114. BBS (415) 849-BMUG.

MacNexus. Sacramento's Macintosh User Group. 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

MacProgram Unlimited. Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.

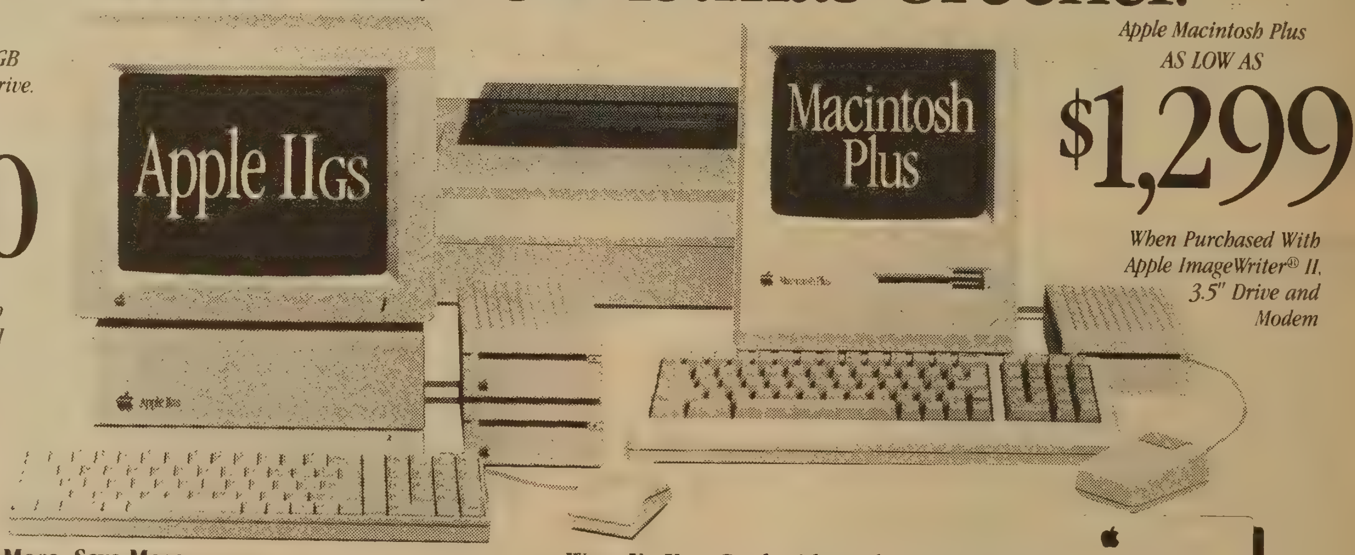
Stanford Macintosh Users Group (SMUG) meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUK for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

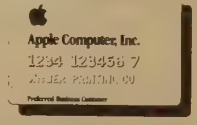
Club Mac of Monterey. Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter $25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

Macs Of Marin. Macintosh users of Marin County. Both beginning and experienced users are welcome. Meetings: Room 104, Austin Science Building, College of Marin, 2nd Thursday of each month, 7:00 pm. Contact Steve Salzman, (415) 459-5707.

maCruzers, a Macintosh user's group, meets every second Wednesday of the month at Louden Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megs of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

Association of Apple 32 Users. Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.





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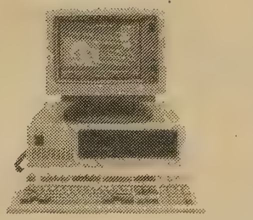

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BAMMSBUA: (San Francisco) Bay Area Mac M.S. Basic Users Anonymous. A high-level users group devoted to the Microsoft dialect of BASIC for the Macintosh. Meets the second Tuesday of each month. For more information contact Ted Jones (415) 826-9239.

Mac Health User Group. For DentalMac, Medimac and Chiromac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in healthcare practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

Hellmans Open House. Meets every Tuesday 7 pm at 814 "E" St. San Rafael. Macintosh Network Games, Mazeware and Net-Trek, Bring your Mac and Appletalk cables if you have them. For more info call (415) 453-7924.

Christian Macintosh Users Group, Silicon Valley Chapter. Meets first Thursday of each month in Santa Clara. Newsletter and support hotline available All user levels welcome. Call Rick Thrasher at (408) 437-1913.

MICROMATE

East Bay Micro-Mate Users' Group. CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miler, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

MICROPRO

Wordstar Users. Forming user group for Wordstar users. Please write to P.O. Box 1331, Menlo Park, CA 94025 or call (415) 325-4277.

MIDI

MIDI Applications Group. Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

MORROW

BAMDUA (Bay Area Micro Decision Users Association). Meets on last Tuesday of the month, 7:30 pm. Call (415) 644-2805 for location. Monthly newsletter.

SMUG (Stanford Morrow Users Group). Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

PETMUG — Petaluma Morrow Users Group. Meets Westamerica Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

San Francisco Computer Society, a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

Silicon Valley FOG. Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

NEC

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

NORTHSTAR

INSUA Largest North Star users group in the world. Members' newsletter and software library. Membership dues $20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

NOVELL

Novell User Group of Silicon Valley. A Novell user group forming. All those interested contact Robert J. Harrigan Jr. at 38 Corning Ave., Milpitas, CA 35035. (408) 263-0987.

OSBORNE

East Bay FOG (First Osborne Group) Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

SMOG3 Osborne User Group (Peninsula) Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

MTDOG (Mt. Diablo Chapter-First Osborne Group) Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

North Bay First Osborne Group. Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.

Microcomputer Users Of Santa Cruz (MUSC). A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

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PAPERBACK SOFTWARE

V-P Planner Special Interest Group. Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

PEACHTREE

Peachtree User Group. Peachtree users group forming. All those interested write for info. P.O. Box 20607, Oakland, CA 94620. Or call (415) 465-3570.

PICK

Northern California Pick Users. NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

PIED PIPER

Pied Piper Users Group Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

PROLOG

Prolog. A SIG-Prolog is being formed. Interested? Call Jorge (415) 969-5045 or Dave (415) 368-8450 (evenings).

TPRO Users. A group formed for users of Turbo Prolog. Contact Kim Floyd, 3109 Scotts Valley Dr., Suite 138, Scotts Valley, CA 95066. (408) 867-3438 x27. BBS: (408) 438-6506.

R2E

North Bay R2E Forming user group for R2E System microcomputer users. Please call (415) 235-1598 for information.

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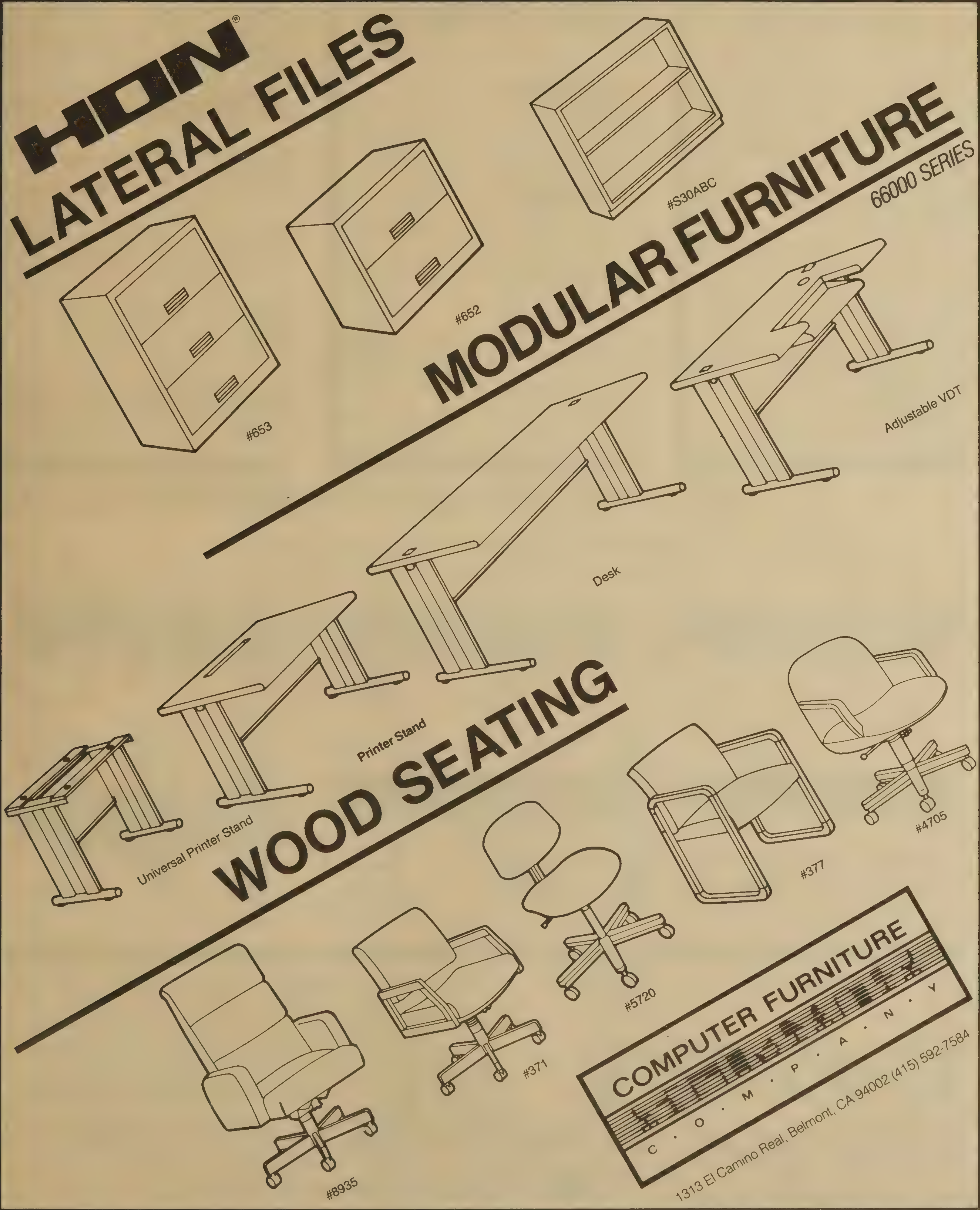
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this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

TRS Nybblers. All Tandy computers including MS-DOS (IBM Compatibles). SIG's include laptops, CoCo's, Mod 1,3,4, Mod 2, 12, 16, 6000 and MS-DOS, Access to a variety of Public Domain software. Education modules, "problem solving" peripheral committee. Meets at Chabot College (Rooms 600 & 1564) 2nd Friday, 8 pm. Write TRS-Nybblers, Chabot College, 25555 Hesperian Blvd., Hayward, CA 94545. Attn Mel Edwards. Call B.B. Jarvis (415) 846-3575.

Bay Area Chapter of the California Computer Federation, a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

South Bay TRS 80 Users Group (SBUG). Meets on the second Tuesday of the month, 7:15 pm, Saratoga Library. Contact Chris Oman, P.O. Box 60116, Sunnyvale, CA 94088. (408) 985-9460. BBS: (408) 249-8259.

San Mateo TRS-80 Users Group. Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF., 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

Bay Area NEC/100 Users. For NEC 8201A and TRS-80 Model 100. Meets 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

Byte Bandits of America. Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200. 24 hrs., free, (408) 374-3974.

Club 100. A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

United Computer Federation: San Francisco Chapter. Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

Sacramento COCO Club. Meets 3rd Saturday of the month, 7:00 pm, at the Four Seasons Restaurant. 65th and Folsom Blvd. Contact Bill Drennon at (916) 486-1594 or write P.O. Box 214733, Sacto, CA 95821-0733.

REALWORLD

Bay Area REALWORLD Users Group meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

ROYAL

Royal Alphatronic, San Francisco. New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

S-100

S-100 Bus Users Group. Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

SANYO

Sanyo MBC 1100-1150 user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

Sanyo National Users Group. SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

Sanyo PC Compatible Club. SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate $20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

SOUTHERN PACIFIC

ICOLATUG. User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

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South Bay T.I. User Group. One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriques Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

Nor-Cal TI 99/4A Users Group. Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

Santa Clara Valley TI Pro User Group. Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

THEOS/OASIS

Theos/Oasis Users Bay Area Group. Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

TIMEX/SINCLAIR

East Bay Timex/Sinclair User Group (EBZUG) Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

Timex/Sinclair Users of Silicon Valley (GUTS/SV) c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24-hours, 32 lines (no waiting!).

Silicon Valley Timex/Sinclair User Group (SVTSUG) Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

UNIX

The Unix C-Club Seminars, public domain softwares, information exchange, Unix hardwares and softwares. Discount on purchases. Meets 2nd Saturday of each month at 10 am. Call Gilbert B. Dalit at (415) 348-6723 or (408) 238-5587 for more information, or write: 122 2nd Ave., Suite 214, San Mateo, CA 94401.

Silicon Valley Net. Meets every fourth Tuesday of the month, 7:30 pm, at 3000 Hanover, Palo Alto. SVNet presents speakers on topics of interest to UNIX users. Informal, technical setting where questions are welcome. Free of charge.

VECTOR

Bay Area Vector Group Meeting held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

VICTOR

Victor User Group. San Francisco Bay Area Victor User's Group. Dues are $30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact John Kimber at (415) 797-6423 or Bordman Moore at (415) 283-3285. Modem (415) 574-7914.

VTC-1050

VTC-1050 User's Group. Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

WORD PERFECT

Word Perfect of Santa Cruz. Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

Word Perfect SF PC UG. Meets on the first Monday of each month at 6:30 before general meeting at Fort Mason, Bldg. A, Rm. 5. Contact D. Wayne Smith at (415) 221-9166.

South Bay Word Perfect User Group. Call Martin Van Derpool, (408)238-8434 for information.

ZENITH

Zenith User Group of San Francisco. Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

B.A.H.U.G. Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm second Tuesday of each month.

NBHZUG North Bay Heath/Zenith Users Group. Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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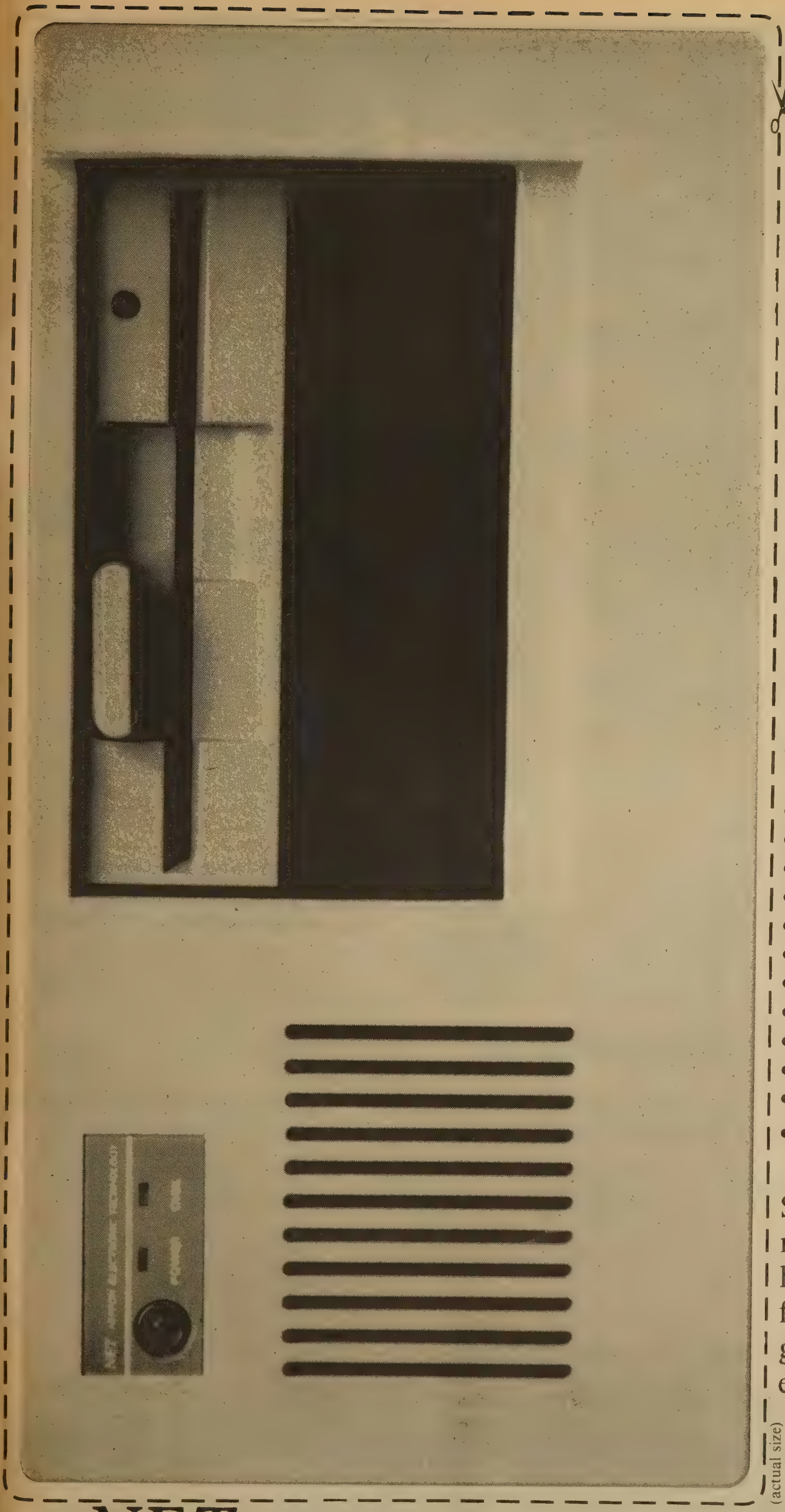

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DVORAK'S LAST COLUMN

Much More Or Much Less:

A Curious Tale Of Idiocy From the Top Down

By John C. Dvorak

Executives, law makers, managers and decision makers from all the corners of society are ruining the country and stalling progress because they don't know diddly about computers. The ones who know "just a little" are worse.

Anecdote number one. A friend of mine is an attorney who uses a Macintosh for his small practice. He loves to use a LaserWriter to produce typeset documents. He told me an interesting detail. He can print out the exact copy of certain state-approved legal forms, but legally he isn't allowed to use any but the ones provided by the state. This is to keep shysters from changing a word or two in a common document and palming it off on a sucker and then coming back with "you didn't read the small print." It's easier for my friend to use his digitized version and fill in the blanks on the screen, though, then it is for him to mask out an original and use the LaserWriter to print onto the state provided form. There is no chance of him hitting the blank spaces correctly on the preprinted form. So he ignores the edict and creates his own copies of the state forms. Someone has to be progressive.

Anecdote number two. A recent stay at the Meridien Hotel in Newport Beach brought this idiocy issue home for me. The screwball phone system at the hotel is so high-tech that it can't be used with a computer. You can't slip an RJ-11 jack into the wall socket because an alarm sounds if the phone is unhooked from the wall. You can't tear the phone apart to find connections to hook into because it is a non-standard digital phone system with a host of wires coming in and out which control everything from the descrambler on the TV to the thermostat (no kidding!) in the room. It's an incredible piece of crap. Does it have a modem jack, or any way to hook a modem to it? Nope. So much for high tech phones. When I asked around about the possibility of hooking into the system with a modem, I was told it simply can't be done. Even if I figured that I could use my Kyocera acoustic adapters (which I left home thinking a new hotel such as this would have a functional phone system) I noticed that the dopey phone handset had a peculiar square shape so I couldn't get a good fit anyway.

More irritating than the executive decision to ignore computers or to patronize users, as the home banking systems do, is the executive decision to do things with computers that computers weren't designed to do.

This isn't progress.

Why equipment like this is chosen is a mystery to me. But it *is* chosen, and the real needs of the modern computer user, whether a businessman or hobbyist, are ignored by executives who can't even type, let alone use a computer.

I could go on with anecdote after anecdote. I can bitch about the numerous home banking systems, none of which can tell you anything up to the minute. Most are hard to use, inconvenient, slow to pay bills, hard to audit. In short, they are junk. For the most part the systems initiate no real computer-based transactions. When you talk to bankers about this stuff, they voice a fear about some hacker getting into the main files and ravaging the bank's assets. While there are ways to keep this from happening, they will never be implemented by a bank, that's for sure. So why even have home banking?

You can see this kind of folly everywhere, but more irritating than the executive decision to ignore computers or to patronize users, as the home banking systems do, is the executive decision to do things with computers that computers weren't designed to do.

The first and foremost dubious use for computers is the overblown Dynabook concept invented by Apple Fellow Alan Kay. Kay, like other "visionaries" such as Ted Nelson, perhaps Stewart Brand, and maybe still a few others, sit around all day trying to dream up some neat imaginary uses for a computer. For this they get a lot of praise from men and much swooning from women (perhaps it's the other way around — no matter). Most of us recognize all this as blue sky drivel (fun drivel, but drivel nonetheless) or we recognize it as a substitute idea source when there are no low quality paperback science fiction books to be found.

Unfortunately, too many rum-happy executives take these guys seriously and wap! some dumb project is underway. There are at least six dynabooks being developed as I write this column. As for dumb projects in general, I figure there are over a thousand underway, many fueled by executive use of mind-numbing and libido-boosting cocaine, a drug which reduces the possibility of making correct decisions to zero or less. But these coke-induced projects are so laughable I'll avoid discussing them, and instead mention those simply fueled by ignorance, arrogance and no appreciation of the personal computer.

In this category I suppose I could again include home banking; any teletex system ever invented; software delivery systems where expensive commercial software is transmitted over a phone line to a store; radio broadcasting of software to antennas hooked to the top of the computer; cable TV delivery of software games; software vending machines; and, finally, Dynabook — the computer cum book cum source of all wisdom.

There are at least six dynabooks being developed as I write this column. I figure there are over a thousand dumb projects underway, many fueled by executive use of mind-numbing and libido-boosting cocaine, a drug which reduces the possibility of making correct decisions to zero or less.

It's not that it wouldn't be neat to have a book sized computer that actually did something more than display in four lines by 10 characters of text the message: APPT. 2 PM root canal. Heck, a note pad does it better. Ignored in all this is the technology itself. All that has drastically improved since the invention of these machines has been memory prices and microprocessor speed. Display technology isn't close to providing the kind of contrast needed to make a dynabook. But that may be besides the point. Is this a realistic use for the computer?

It's not the only silly use. The computer as a note pad or typewriter or scribble board is a joke use dreamed up by visionaries and developed by executive decree. The computer as encyclopedia, newspaper, scrapbook or even artist's easel is a laughable and a pathetic attempt to shoehorn a new technology into the rock solid positions occupied by old and established technologies. I think we should leave the old technologies alone and try something unique.

VisiCalc was much more than a simple one-dimensional calculator. The phrase "much more" is the key. Videotex and teletex are "much less" than a newspaper. The on-line encyclopedias are "much less" than a real encyclopedia. Home banking is "much less" than a checkbook and envelope and the mailman. You get the idea. Let's hope some dingbat executives get the picture. I'm afraid they won't. They'll get "much less" too. ☐

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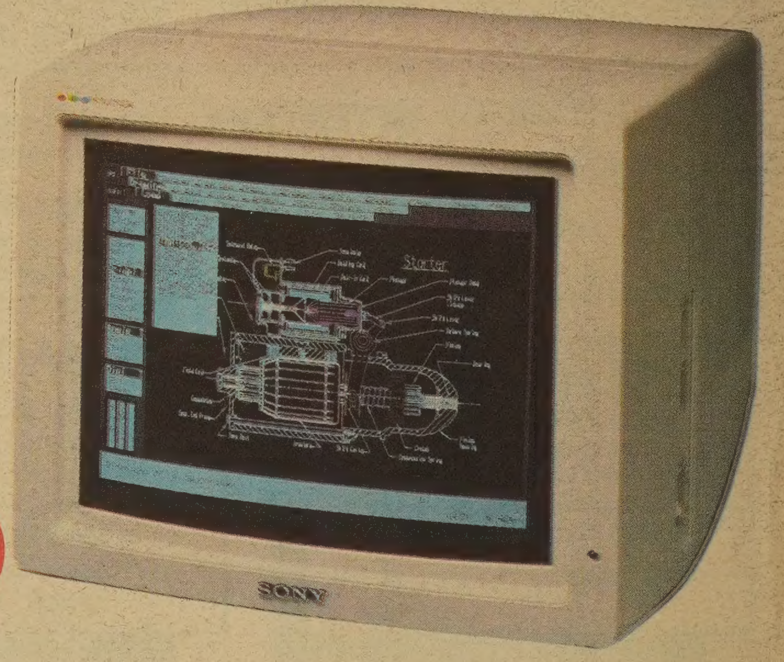

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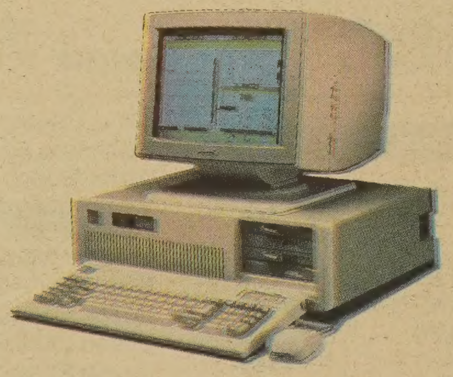

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